THE BRICKBVILDER

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The Modern Schoolhouse.

I. THE CLASS ROOM.

By WALTER H. KILHAM.

SCHOOLHOUSE architecture stands to-day at the parting of the ways. While millions of dollars are expended each year on splendid school buildings throughout the country, almost no form of modern building has made so little real progress in the last twenty years as the public school. From a diffuse method of designing, which used to subordinate the plan to the external requirements of "American Romanesque," the pendulum swung towards excessive standardization of the plan, merciless reduction of the cube, and suppression of all originality in design. Now there is evidence of a movement towards "humanizing" the school building while retaining the advantages of standardization, and the introduction of various sorts of civic conveniences into the buildings to increase their value to the community at large. Meantime, the cost of schoolhouses is advancing by leaps and bounds, and it is a real question whether the municipalities should be expected to make such large investments in buildings when educational ideas are still in a state of development.

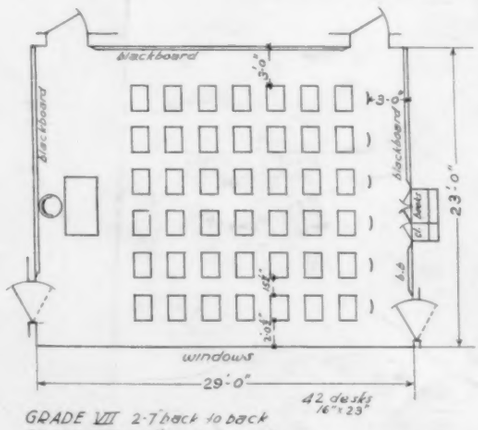


Fig. 1. Seating Plan for 23 by 29 Class Room

During all this period little advance has been made in the science of heating and ventilating, of disposition of wardrobes, of the question of recreation space, or in the general features of the schoolroom itself beyond a tendency to narrow its form and to hold down its seating capacity.

These papers will attempt to deal with the problems of the school architect in this period, which, in many ways, the writer believes will be the most interesting one for many years, and to discuss matters of school planning and details of construction as they arise in the course of the planning and erection of a modern school building.

Size of the Room. The first point to be decided is the number of desks to be accommodated. The practice of seating fifty or more pupils in an ordinary class room under one teacher is now only followed in congested cities where it has been impossible to keep the school accommodation up to the needs of a growing population. The general practice is to reduce the number of desks to forty-two, and some towns are even adopting thirty-six as the standard number. It is therefore possible to somewhat reduce the standard size of a room from that formerly adopted. Practical school men also dislike a room which is so large as to tempt the installation of additional seats with the pressure of increased population in the district. In general, the length ought not to much exceed thirty feet, as it is difficult for a pupil in the rear to easily see figures on a blackboard at a greater distance, and there is danger of difficulty in hearing a teacher unless she speaks very distinctly from this distance.

In a class room lighted unilaterally the width from the windows to the corridor wall has been diminished, until the general practice is now to make it about twenty-four feet. Twenty-three feet has been used to a considerable extent and is perfectly practicable for primary schools, but hardly wide enough to take six rows of grammar grade desks with aisles between each row. (See seating plans reproduced herewith.) Where forty pupils are accommodated in five rows of eight desks, the room may even be narrowed to twenty feet.

Professor Dresslar ("American Schoolhouses," 1911) states that the width of the schoolroom where unilateral lighting is used should never exceed twice the distance from the floor to the top of the windows where external conditions are favorable, and where they are unfavorable even this distance is too great, and he cites German authorities who insist on a factor of only one and one-half times the height. He concludes that in our climate, which is brighter than that of Prussia, a standard classroom should be 24 by 32 feet by 12½ feet high from floor to ceiling.

The Boston report for 1914 gives 23 by 29 feet as the standard size for upper and lower elementary grades, and not less than 12 feet 0 inches high in the clear. High school rooms are 26 by 32 feet for forty-two desks. This is not, however, always followed, the department stating that they regard it as an ideal size, and indeed have no objections to an aisle as narrow as 15 to 16 inches. Their

aim is rather to obtain a room area of approximately 15 square feet per pupil. The new Massachusetts state law, however, prescribes widths of aisles as follows:

	Wall Aisles.	Center Aisles.
Primary schools	2′–4″	1′–5″
Grammar schools	2′–8″	1′–7″
High schools	3′–0″	1′–9″

Taking the case of a grammar school class room with six rows of twenty-four-inch desks, it is evident that with a three-foot blackboard aisle the room would have to be at least 25 feet 7 inches wide, or else have only five rows. In this case the room might be 21 feet 0 inches by say 32 feet 0 inches or, perhaps, a little more, the tendency being to lengthen the room beyond the accepted standard. It remains to be seen, therefore, whether the new law will have beneficial results. If the additional width in the aisle is merely a matter of easy egress, it hardly seems to be necessary and not worth the injury done to the shape of the room from the point of view of lighting as well as hearing and seeing. The state authorities claim that their object in holding to the wider aisle is to limit the seating capacity of the room. In this case it would seem that the desired object might be more directly attained by prescribing a certain amount of floor area or of cubic air content for each pupil. The Massachusetts state law, applying to other cities and towns than Boston, prescribes a schoolroom width of not more than two and one-third times the height. New Jersey requires a ceiling height of at least twelve feet. Fifteen square feet and two hundred cubic feet of space per pupil is another rule which fits conditions well and is adopted by the State of New York. New Jersey uses eighteen square feet. It is obvious that a building standing free in an open lot will receive better light than one in a city where it is likely to be darkened by adjacent buildings. A good many buildings have been constructed with rooms 13½ and even 15 feet high, but the long stairways and additional cost of construction are not offset by any advantage in lighting.

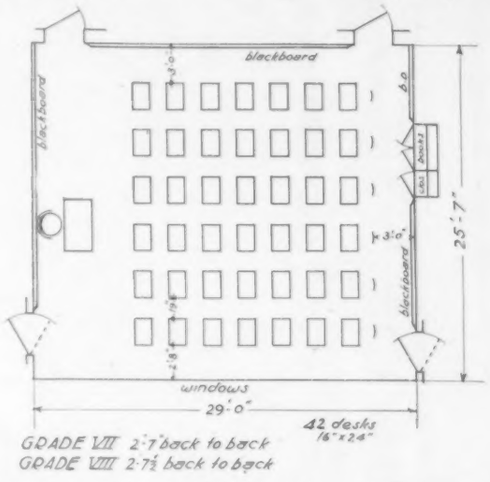


Fig. 2. Illustration of Application of Massachusetts Law for Grammar Grades

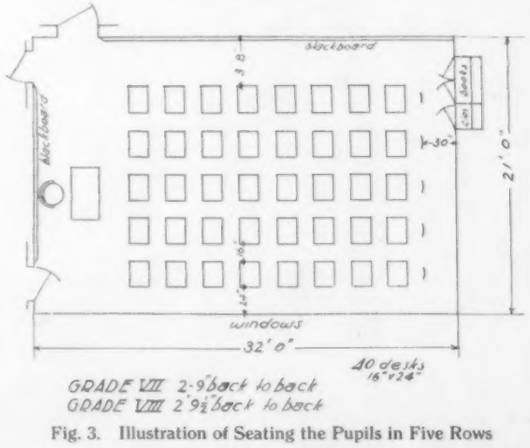


Fig. 3. Illustration of Seating the Pupils in Five Rows

Windows. It is a time-honored rule that the glass area of class-room windows, measured inside the sash, must be at least one-fifth of the floor area of the room. This is required by the City of Boston and the State of Massachusetts, the former stating that the window head shall be square and close to the ceiling, the latter not specifying whether it shall be square, but requiring it to be not more than eight inches below the ceiling. New Jersey allows a ten per cent deficieney in required glass area to be corrected by the use of prism glass in the upper sash. When this is employed it should be especially calculated to throw the light to the inside of the room.

The Inspection Department of the New York State Education Department rules as follows:

"The windows in all study rooms and recitation rooms should be so arranged that the main light will come from the pupils' left. If necessary to have more window space, the supplemental light should come from the rear; but no window should be placed in the rear directly opposite the teacher's desk. The windows should be grouped together as nearly as possible on the pupils' left, so that the light may be massed, thereby furnishing a comparatively even distribution of light and minimizing areas of light and shadow. The windows should extend as near to the ceiling as the principles of construction will admit, and should be without transoms or unnecessary framework. In study and recitation rooms, one pane of glass to a sash is recommended; under no circumstances should there be more than four. Any considerable area on the side to the left of the pupils that is without window surface should be opposite the space in front or in the rear of the pupils' desks. The ratio of window surface to floor surface should, as a rule, be one to five. If the main light comes from the north or from a side of the building which is much shaded, the ratio should be one to four."

It is not a bad plan to use factory glass in the upper sash of windows on the south side of a building to soften the glare of sunlight and obviate the constant adjustment of window shades.

Large sheets of glass are more easily washed, but unless plate glass is used they present a poor appearance, and in either case are costly to replace when broken. Boston forbids large sheets of glass, and architects in general seem to feel that better scale is given to the building by the smaller panes. The glass area should always be figured exclusive of the muntins. The sills should be kept as near the floor as is possible in order to get good light on the first rows of desks. This height will be controlled to some extent by the direct radiators under the windows, and should be from 2 feet 6 inches to 2 feet 11 inches from floor to top of window stool.

Double hung windows, in two sashes, upper and lower,

are ordinarily employed; but with the growing demand for fresh air forms of windows which allow the opening of the entire window aperture are coming more and more into demand. This subject will be treated more at length later on. Transoms are objectionable, as they are expensive, cut off light, and are hard to clean. Double run of sash is sometimes employed, but with the advent of the metal weather strip its use has become infrequent. It is, of course, very expensive, is difficult to build in a 12-inch wall, costly to clean, and is rather a confession of an inadequate heating plant than a part of the equipment of a modern building.

Much attention should be paid to the arrangement of windows and piers so that no large piers or solid wall surfaces shall be placed so as to cast a shadow on the desks. If necessary to have such a pier, it should come in the part of the wall forward of the area occupied by the pupils. A good point to remember in planning a school is that in these days of high prices the only article whose cost has not increased is daylight. When possible, mullions and heads should be beveled or splayed so as to increase as much as possible the amount of light entering the room.

Blackboards. No other material used in this country is as satisfactory for the blackboards as slate. This should be of the best quality, ¼ inch thick, with joints accurately fitted, cemented, and cleaned off to give a perfect surface. This is not difficult to obtain and no other result should be accepted. Boston requires the blackboards to be 4 feet wide, 22 inches from the floor in kindergartens, 2 feet 4 inches to 2 feet 6 inches up to grade IV, and 2 feet 8 inches in grades V to VIII. In high schools they should be 3 feet 0 inches from the floor. They are placed only behind the teacher and on the long side opposite the windows, the "tack board" occupying the end opposite the teacher.

The requirement of a 4-foot width for the blackboard meets with criticism from some authorities as being excessive. It is evident, for example, that in the upper grade or high schools the top of the blackboard will be 6 feet 8 inches to 7 feet from the floor, so that the upper part is too high to be written on without standing on a chair, and even in a primary school no pupil could reach to a height of 6 feet 2 inches or 6 feet 4 inches. Blackboards are costly and absorb much light, hence it is the writer's practice to reduce their width to 3 feet or 3 feet 6 inches, which is ample and even excessive according to Professor Dresslar's view. He recommends a blackboard width of only 28 inches for the first, second, and third grades, 32 inches for the fourth and fifth, 36 inches for sixth to eighth grades, and 40 inches for high schools. As it is often desirable to have a portion of the blackboard rather high so that matter written on it may be easily seen from a distance, a compromise can be made by having the chalk rail and entire blackboard higher at the teacher's end. This is the board that the teacher naturally uses, and the lower portion, being obscured by desks and tables, is less easily seen by the pupils.

Blackboards, for obvious reasons, should never be placed on the wall piers between the windows. The strain of eye adjustment is very injurious to the pupils.

Ground glass blackboards have not come into general use in the United States. A profitable field for invention would seem to be a material which would give a white or light colored surface on which a black crayon could be used, which, if possible, should be of a sort which would not produce the clouds of dust which come from the ordinary chalk.

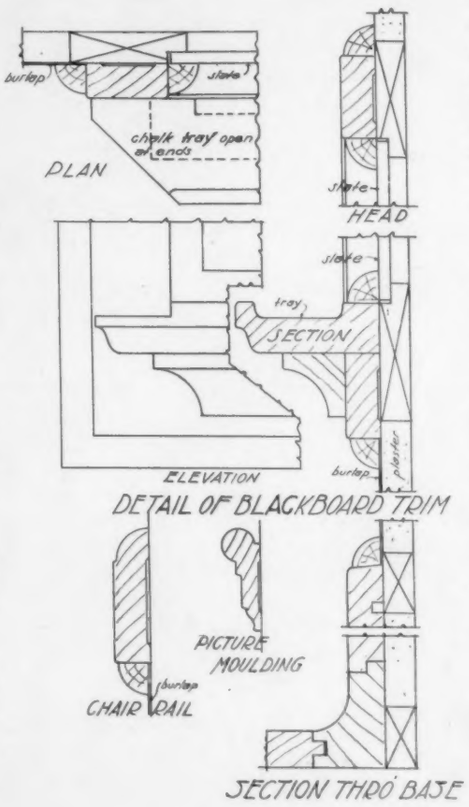


Fig. 4. Detail of Schoolroom Finish

Various artificial blackboard preparations are in more or less common use, some of which are much cheaper but are not as good as slate. Of these, the sort that consists of a liquid preparation applied to the plaster is probably the least satisfactory. There are, however, satisfactory substances which are sometimes useful to employ in "battery" or sliding blackboards, on account of being lighter in weight.

"Battery" blackboards are not in common use except in high schools. They consist of one or two frames containing blackboards hung with chains and weights like a window to slide up and down in front of the wall blackboard. They are frequently useful in laboratories and rooms where a large amount of blackboard work is done by the teacher and it becomes necessary to leave it for several days. Care should be taken in their erection, especially when they are to be attached to masonry walls, as their weight is considerable.

Class Room Doors. Boston requires that each class room shall have one door to the corridor, 3 feet 6 inches wide by 7 feet 0 inches high placed near the teacher's end. Under certain conditions two doors may be required. The door must be partly glazed, open out, and be hung on brass plated, ball-bearing butts (number not specified, but three butts should be used, even if the center one is not of the ball-bearing kind). The door must have a four-lever mortise lock, master keyed, cast brass knobs (not lacquered), 2-inch plain brass numbers, card holders 3½ by 5 inches, and hooks to hold open. Raised thresholds are not allowed. As the wardrobes are entered only from the schoolroom and not from the corridor, this affords only one means of egress from the room. The Massachusetts state law (Form B, 1914) requires that "class, recita-

tion, domestic science, and manual training rooms and laboratories, if so directed, shall have at least two ways of egress, one of which may be through an adjoining room." The Boston claim, which is also the writer's view, is that more than one route of egress from a room is liable to cause confusion and doubt in an emergency which might lead to unfortunate results, and that only doubtful good could ensue from having two doors leading to the same corridor, while serious confusion might be occasioned by classes using the adjoining room as a way of egress, particularly when the adjoining room is served by the same corridor. A real objection to the two-door plan is the space that is wasted in the best blackboard (*i.e.*, the blackboard opposite the windows) by making another door as well as the additional expense. A point also might well be raised against the use of locks on schoolroom doors. Except for book and apparatus rooms, storerooms, etc., the writer can see no valid reason for having any interior locks in a school building, and the objections, as a possible source of danger, are obvious. If used at all, they should be of the type that is always free on the inside.

The best type of door is clearly one that is absolutely flush, without mouldings of any sort, like the doors used in the best hospitals. When this for any reason is not feasible, the paneling should be arranged vertically so as to reduce the number of horizontal ledges to hold dust.

Objections are sometimes made to the glass panel in the door on the ground that it destroys the privacy of the room. It has been the writer's experience that a great majority of schools are operated with the doors open anyway, and the light coming through the glass panel has great value in lighting the corridor. The disadvantages of the glass panel have not been apparent. In case of objection to transparent glass, a rippled or frosted glass could be used which would ensure privacy without impairing its lighting value. The size of the panel is a matter of preference. In some places it extends the entire length of the door.

Transoms are useless and expensive, collect dust, are difficult to clean, and should not be employed.

High fixed sash above the blackboard on the corridor wall are used to obtain additional light for interior corridors. They introduce another surface to be kept clean, and are no addition to the class rooms. Their value in helping light the corridor, however, makes it desirable on the whole to include them in the plans. When used, the sills or ledges should always be splayed down, both to admit more light and to avoid making a horizontal ledge to collect dust above the eye line, and consequently unseen. What dust collects on the splayed down surface is visible and hence likely to be removed.

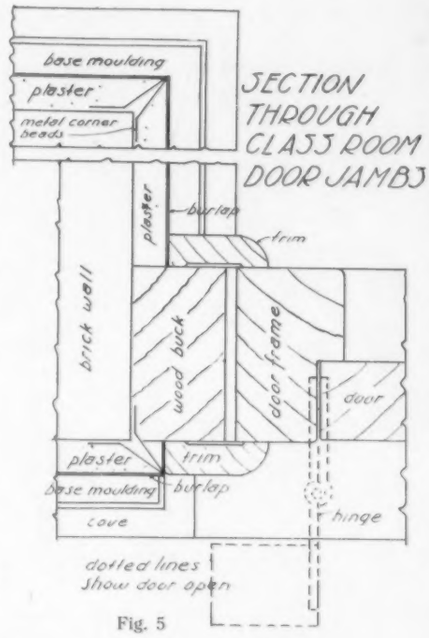


Fig. 5

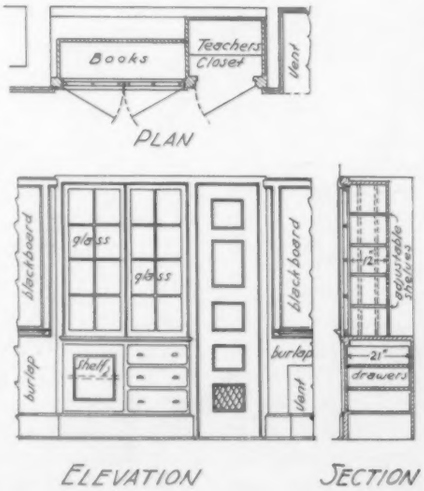


Fig. 6. Detail of Teacher's Closet and Bookcase

Tack Boards. For pinning up drawings or pictures, a soft surface into which thumb tacks can be pushed is necessary. This is accomplished in Boston schools by substituting for the blackboard at the rear end of the room soft wood sheathing with burlap stretched over it, with sewed seams extending from the base to the moulding at the top of the blackboards. A picture moulding is included at the top of the burlap. Instead of burlap the use of cork tile is suggested as being more cleanly and better adapted to the purpose. In the lower grades the tack board is omitted and a card rack at the top of the blackboards is substituted.

Bookcases. A bookcase with glass doors which will lock, together with some drawers and a cupboard below, is a necessary part of a class room. Space for this can generally be found in the thickness of the ventilating stacks without projecting into the room. Where this is not practicable, they may be built in any convenient corner. Boston specifies that these bookcases shall be about 5 feet 9 inches wide and the upper doors be fitted with cylinder, master-keyed locks, latch, and knob. The drawers and cupboard are to have ordinary locks. The drawers and cupboards may be 15 or 20 inches deep, but a depth of 9 or 10 inches is all that is necessary for the bookcase. The book shelves should be adjustable. Where the building is to be used for both day and night sessions, an arrangement of pigeon holes for holding the books of the day scholars when the night school is occupying the desks is desirable.

Teacher's Closet. Preferably in connection with the class room, but allowably from the wardrobe, there should be a small closet for the teacher's coat and hat. This may frequently be managed in connection with the bookcase. (See drawing.) A wire grille panel at the bottom and top of the door gives ventilation. The closet should have a shelf and five or six hooks.

Walls. Up to the level of the top of the blackboards it has been common to cover the walls with a good quality of burlap, which is free from projecting knots and loose ends, hung vertically and pasted to the plaster in wall

paper style. This is then painted with a glazed surface which renders it non-absorbent, and it forms a splendid protection to the plaster. A great many schoolhouses have been thus treated, but it is more and more the writer's observation that with the good discipline obtaining in modern schools any special protection of plaster is unnecessary, especially if hard plaster is used. The burlap is, in many ways, an improvement on the old style of wood sheathing wainscot, with its many dust-holding joints and its high combustibility. It is, however, difficult to get a good job of burlap in places where the workmen are not accustomed to the process, and it has a way of sometimes coming off after a few years' use. It is also quite expensive, and the cost of burlapping a building would pay for any plaster repairs required for a long term of years. When burlap is not used, ordinary wooden corner guards from the base to about 6 feet 0 inches high form a sufficient protection for exposed angles. Where all the walls are of brick or other fireproof material, glazed brick or tile are sometimes used for dadoes, and, aside from their cost, are excellent. In England, where a wider variety of this sort of products is available than with us, they are extensively used in the rooms and corridors.

Above the top of the blackboard the wall is painted in oil to the picture moulding, which is placed one-half an inch below the ceiling.

Fireplaces. A fireplace in a class room is such an anomaly in America that the mere mention of it here may cause a smile. They are universally used in England, however, and when a fire is kept in them they add enormously to the cheerfulness of the schoolroom. The writer has already introduced them in one or two instances and ventures the opinion that with the irresistible growth of the new notions of ventilation their use will become common.

Ceilings. The ceiling is generally tinted in water color a light cream or buff, but reasons of economy sometimes require the plastering to be merely left white and clean. The angle with the walls is square, no coves being introduced, and when possible it is better to have the ceiling free from drop beams. When these occur, however, as in fireproof construction, running at right angles to the outside wall, it is better to let the window heads run up between the beams, thus gaining additional light, than to fur across the bottoms for the sake of a level ceiling.

Floors. The best wood wearing surface for a class room floor is undoubtedly maple, which should be of the best commercial grade, with sides and ends matched, about 2½ inches wide and blind nailed. Beech and birch are used to some extent and also rift Georgia pine, which makes a good-looking floor but has a tendency to splinter. "Heart rift" is the quality which should be used, but owing to the tendency of contractors to try to substitute inferior grades it is safer to specify maple. A two-inch cove base into which the baseboard is rebated is much in favor as an aid to cleanliness, although in practice it is apt to shrink and form a dust-holding crack. An under floor should always be laid when the floor is framed with wooden joists and it is better to provide it even in fireproof construction. This should be of boards not over eight or nine inches wide and laid diagonally so as to allow the upper flooring to run lengthwise of the rooms without being affected by the shrinkage in the boards of the under floor. Between the upper and lower floors a layer of incombustible building paper should be laid in all second or third class construction. Raised thresholds should be eliminated as useless and apt to hold dust.

The upper flooring should always be laid lengthwise of the rooms, in order that when the boards in the aisles between the desks which take the most wear become worn out, new ones may be easily substituted. The same remark applies to the flooring of the corridors and wardrobes. Only the best materials should be used for schoolhouse floors, as it is the part of the building which receives the greatest wear and is the first to need repairs.

Deafeners are not used to any great extent in schoolroom floors, aside from the layer of paper or felting between the upper and lower boards. For special places such materials as mineral wool, a "quilt" of seaweed and paper, or even mortar are sometimes employed.

After laying, the floors should be traversed and planed to a smooth and even surface and then oiled.

Platforms for the teacher's desks are no longer used.

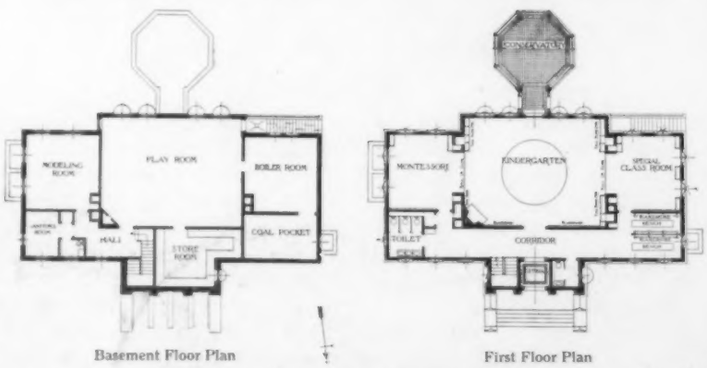
Battleship linoleum has not proved to be a satisfactory material for class room floors on account of its property of showing all footprints and dust marks, making constant cleaning necessary, and also on account of the difficulty of fastening down desks and chairs without ruining its appearance in case a different seating arrangement is used. Difficulty has also been experienced in Boston in overcoming the tendency of the edges to turn up. It has also been found to wear out rapidly under the scuffling of a pupil's feet constantly in the same place, as under a chair. It may find a place in rooms not having fixed furniture, or possibly for offices.

Details. The various details of woodwork, etc., in the class room need to be studied with the greatest care. In these days, which mark the passing of wood as a building material and the widening use of actually unburnable material, an effort should be made to reduce the amount of wood used to its lowest terms. In particular, every effort should be made to eliminate grooved mouldings and ledges which form lodging places for dust. This seems like a totally unnecessary remark; but the writer has recently seen a large new school built with widely projecting, finely detailed cap mouldings around the tops of the blackboards and extra wide wooden mouldings around all the fixtures. Projecting architraves with a ⅞ inch ledge on top should be eliminated. Wooden trim of any sort should have the top rounded or beveled so that any dust settling there can be seen and cleaned off, especially when it comes above the eye line. The chalk trough should have the groove run to the ends so as to be easily cleaned out. Removable wire nettings for holding the eraser clear of the trough are sometimes used, but are gradually being discontinued as being merely a useless source of expense. Mouldings around heating inlets are unnecessary, as the frames containing the deflectors are now made with flanges, which should fit tightly to the wall so as not to make dust pockets. The grille is omitted at the outlet opening, and the floor and base run directly in and around it, forming no place which is not directly in plain view. All corners of wood trim should be rounded. Many schools are finished in North Carolina pine and some in chestnut, but the best woods are undoubtedly ash or plain oak, with preference for the latter. These woods are strong, hard, durable, of agreeable appearance, and suited for this use.

THE KINDERGARTEN.

THE Boston requirements for a kindergarten require at least the space of an ordinary class room and wardrobe, but preferably a space of 800 or 900 square feet. They comprise a large room, a small room, a supply closet, a wardrobe, and a water closet. The large room should have a 16-foot circle, regulation lines painted on the floor with at least 4 feet around it. The small room requires about 200 square feet, with wide doors or "Flexifold" curtain opening into the larger room. In addition there should be a supply closet, a wardrobe, and a toilet room connected and separate from the main toilet rooms. This should have a low water closet and a bowl or sink.

The room should be in a sunny corner of the building and should have windows on two sides. A linoleum floor is desirable as the furniture is not fastened down. It is also much warmer than wood, a good point, as the small children are on the floor more or less of the time. The blackboard heights are the same as for primary grades. The usual bookcase should be provided, but the teacher's closet should accommodate clothing for two or three teachers. The wardrobe must accommodate sixty hooks.



Basement Floor Plan — First Floor Plan

Anne L. Page Memorial Kindergarten, Wellesley, Mass.
Kilham & Hopkins, Architects

In places where the kindergarten has been less standardized, the accommodations provided are much more liberal. The open fireplace is frequently found and especial care is taken to introduce an artistic and pleasing decorative scheme. Attractive sun rooms are provided for winter play, and the rooms are larger and better equipped.

An interesting type of kindergarten is that recently built at Wellesley, Mass., on the grounds of Wellesley College. This is a one-story building constructed of hollow tile with stucco covering, and designed to resemble the regulation school as little as possible. The main floor contains a large central room, a smaller room for Montessori work, and another small room for special work, all three arranged on the south side of the building, assuring both sunshine and seclusion from the highway. This floor also contains the toilet rooms with miniature fixtures for the pupils and regulation size for the teachers, also wardrobes supplied with low benches for the easy putting on of little leggings and rubbers. The standard pole fixtures are used for the garments.

The schoolrooms have large French casement windows so as to admit all the air possible. The floors are covered with cork matting, an improvement over linoleum in that it obviates the danger of the child's slipping during the games, is noiseless, and not cold—a very important feature of a kindergarten.

Indirect lighting fixtures are installed for use on dark days. Special cases are provided for materials used in carrying on kindergarten work. Blackboards are provided and also tack boards over the cases. The large class room contains a fireplace where the children can gather for stories around a cheery fire, and the walls are tinted a soft brown, which harmonizes with the woodwork of fumed oak.

At the rear and not interfering with the light is projected a conservatory with masonry walls to the window-sill height and special greenhouse construction above. Shelves and plant boxes are placed around the windows. The floor is of brick and tile. This may not only be used as a sort of play room, but also as a place for the study of plant life and the care of flowers.

The basement contains in the southeast corner — which, owing to the slope of the land, is well above ground — a room for clay modeling, a janitor's bedroom and bath, and the usual heating and ventilating plant, etc.

All the plumbing fixtures for the children are carefully selected and of special low height. Toilet rooms have terrazzo floors and sanitary bases.

The details of the casement windows are of interest, being made according to actual French practice instead of the usual American type. The advantages of having the kindergarten in a separate building away from the older pupils are obvious, but it is naturally an arrangement difficult of general adoption.

(To be continued.)

Monographs Upon Types of Buildings Met in Everyday Practice.

THE SMALL TOWN LIBRARY AND THE MODERN PRINTING HOUSE.

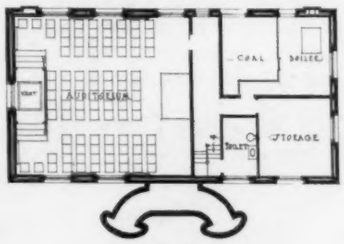
THE public in general is apt to consider that for a small outlay of money nothing but a work of mediocre merit can be achieved. This supposition has again and again been proved false, and yet again and again people will say in an apologetic way when referring to a building that was built for a small sum, "Well, you know it isn't very satisfactory either from a practical or an artistic point of view, but what can one expect for the amount that it cost?" Such a statement is really nothing more than either a reflection on the amount of study given the building by the architect, or a reflection on the intelligence of the speaker, who very probably wanted fifty thousand dollars' worth of building materials erected and donated to him for half what they cost the contractor.

The point which it is wished to emphasize here is that no matter how small an amount of capital is to be invested in a building operation, the expenditure can bring, with proper study by the architect in co-operation with his client, a result that is as practical and æsthetic as the size of the building and character of the materials attainable at the designated price will permit.

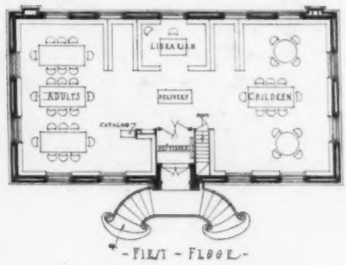
An example which will demonstrate this is the small Carnegie library which has just been completed for the town of Sharon, from the design of C. Howard Walker, architect. There undoubtedly have been many libraries built that are similar and equally good. There is nothing unique about this library building except that it has been carefully thought out and built with good materials at the low contract price of $9,703 by a first class builder.

Care was exercised in choosing a site suitable to the type of building contemplated. A site for a public library in a small town should be in the center of the town. The building committee was fortunate in securing such a location. The architect, finding a basement auditorium was required, avoided so far as possible a high basement front façade by placing the building in such a way as to take advantage of the slight slope towards the rear of the lot.

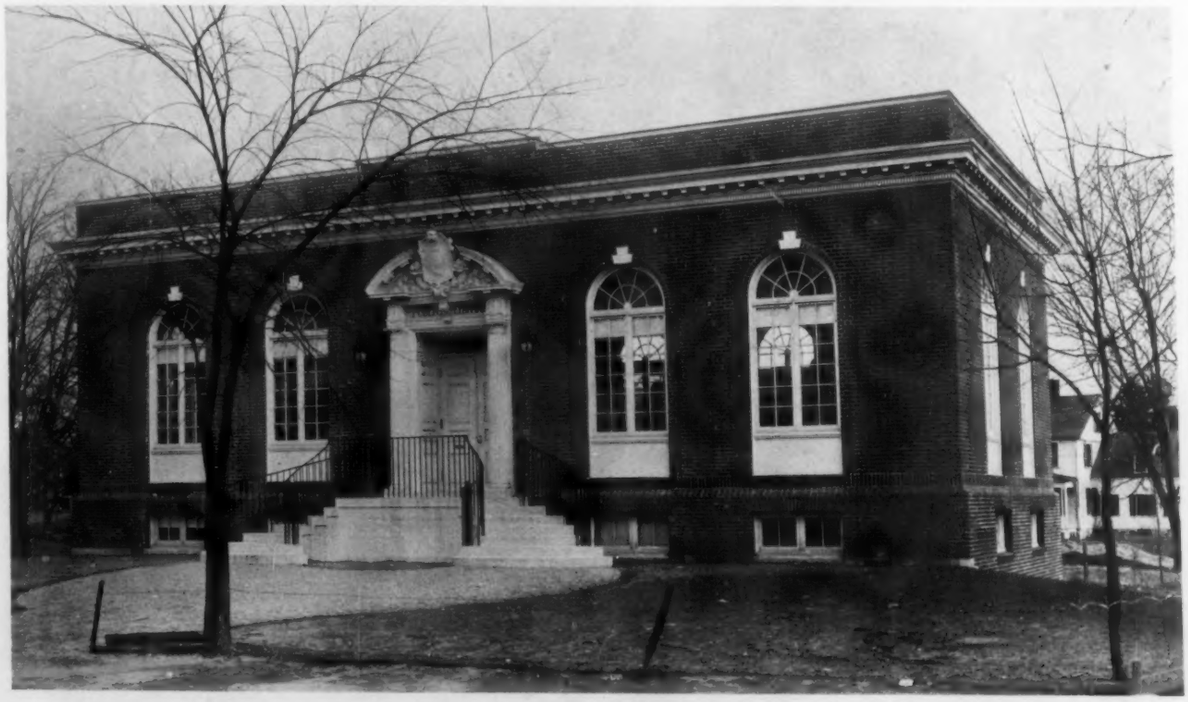
It was decided by both the building committee and the architect that the building should be in design architecturally harmonious with the traditions of the town. The town was essentially



BASEMENT PLAN



FIRST FLOOR



Carnegie Public Library, Sharon, Mass.
C. Howard Walker, Architect

of New England traditions, and the Colonial style was therefore adopted.

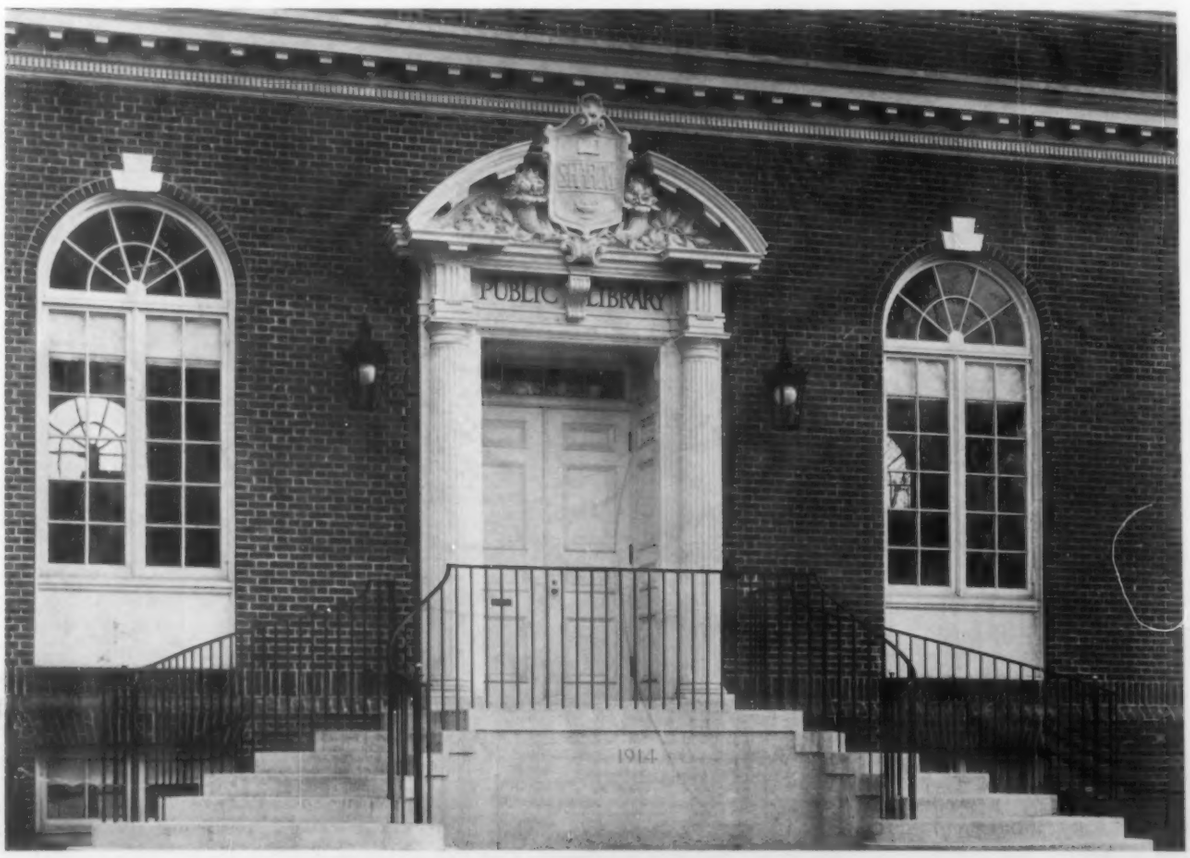
Naturally before considering the exterior of the building, the plan was carefully studied. The library was to be controlled by one person, which naturally suggested one room. Librarians, however, like to have their own private quarters; children and adults cannot be indiscriminately poured into a reading room, and a number of people, often thoughtless in disturbing readers, come to a small library simply to return or take out books for home use. One room, therefore, carelessly planned, would obviously create turmoil. The solution of the problem, to be sure, is simple, and yet it is the simplest solutions that are sometimes the ones never put into execution. People coming to the library merely for a moment's visit find the librarian directly opposite the entrance, ready to take or deliver books. This free passage from the front vestibule to the librarian's desk automatically separates the two sides of the room — one side devoted to children, one to adults. The librarian is assured a certain privacy in an alcove flanked by bookcases and separated from the room by the desk, from behind which visually the room is under control, and the librarian screened behind the desk is removed far enough from the door to escape the draft while it is open.

Cold and rainy weather demand a vestibule. A main room (58 by 28 feet inside dimensions) demands as small a vestibule as possible encroaching on its area. The vestibule feature was therefore studied to be compact, and a glance at the plan will show that although ample, the arrangement of stairs, doors, newspaper rack, etc., in connection therewith, leaves no waste space whatever.

In the basement an auditorium with a capacity of one hundred persons with a separate entrance and vestibule, a boiler room, storage space large enough to ultimately allow an antiquarian room to be partitioned off from it, toilets, coal pocket, exit stairs, etc., are provided all studied for a compact and practical solution.

The mechanical equipment of the building was considered both from the point of view of comfort for the library users and for economy in upkeep. The building is thoroughly heated and ventilated; the auditorium is partially heated by indirect heat, the entire building being on an air lined, semi-vacuum system with traps installed to produce semi-vacuum, which automatically decreases the pressure on the boiler, which in turn diminishes the coal bills. The building is lighted by electricity, indirect lighting being installed in the reading room.

The exterior walls are of brick, the texture and bond being carefully selected. The wall openings were thoughtfully studied, and the one feature where the architect felt at liberty to include architectural ornament was the front entrance. This entrance gives to the building an architectural note and Colonial character at slight cost.



Detail of Entrance Doorway
Carnegie Public Library, Sharon, Mass.
C. Howard Walker, Architect

The interior is finished in North Carolina pine stained silver gray, is soft to the eye, and a most attractive way of finishing a perfectly good inexpensive material.

The building is simple throughout; it is not big enough to be anything else, but it is essentially adapted to its purpose and admirably fits its environment.

THE CHEW PRINTING HOUSE, CAMDEN, N. J.

Henry A. Macomb, Architect.

THERE is an increasing acknowledgment of the fact that no good reason exists why a printing and publishing building need resemble a foundry or a cold storage plant. The modern evolution of this type of building as illustrated by the subject chosen here seems to demonstrate the interest the architectural profession is taking in plants of this kind, and it is hoped that each successful work will stimulate further endeavor in the solution of these utilitarian problems.

As will be realized, printers in the larger cities have for a long time had to accommodate their business to floors in conventional loft buildings which were designed to accommodate any one of a number of businesses, all different in their requirements. They have had to accept minimum ceiling heights and poor light, vibrating floors, elevator service all too inadequate, insufficient heating, and bad ventilation as a standing handicap. Added to these there has been the problem of heavy insurance and excessive light charges.

The plan for the new Chew Building was studied with a view towards its specialized construction and equipment. It is a printing house caring for all branches of the printing business under one roof and designed with a nice feeling for the tradition of the printing art as practised in and around Philadelphia.

The building has a frontage of 35 feet and is 99 feet deep, divided into an office section 32 feet in depth with the manufacturing portion in the rear. The walls throughout are built of brick upon stone foundations. The columns, floor, and roof construction are reinforced concrete with the same material used for stairs and elevator enclosure. The main façade is faced with brick laid in Flemish bond. White semi-glazed architectural terra cotta has been used for the entrance doorway, window lintels, and entablature. The inside walls of the office are faced with hollow tile and plastered. The office portion of the building has been excavated and contains a basement for storage, boiler room, coal bins, etc. This gives all the necessary space required in the basement and effects a considerable saving in the total cost of the building. It will be noted on the plan of the first floor that the office is 2 feet higher than the press room floor in the rear. The story height of the front section is 11 feet 8 inches top to top, and 13 feet 8 inches in the press room. Both sections of the second and third floors have been kept on the same level. The high ceilings, together with the large window openings, ensure the natural light which is so necessary in the press and composing rooms.

Much time and money is lost to the printer when the heating is inadequate, it being essential that the temperature of the shop be kept uniform at all times to even a greater extent than in private dwellings, not primarily for the comfort of workers, but because of the serious effects that changing temperatures have on paper and printing presses. Varying humidity is also the enemy of the printer because of its effect on the register of the printed sheets. In both the heating and ventilation of the Chew Building care has been taken to meet the most exacting requirements in this respect.

Freight handling demands important consideration. It is ideal when the freight entrances are large and on a level slightly below the floor of a truck so that its load may be placed on hand trucks, which are pushed on to elevators and then distributed to the places where stock is needed. It will be seen that large doors have been provided on each floor of this building so that both freight and large machinery can be transported by outside pulley hoist if necessary.

Printing House of Sinnickson Chew & Sons Co., Camden, N. J.
Henry A. Macomb, Architect

The press room is directly on the ground, paved with concrete and a hardened dustless cement surface, thereby doing away absolutely with the vibrating floor evil and providing an excellent foundation for the presses.

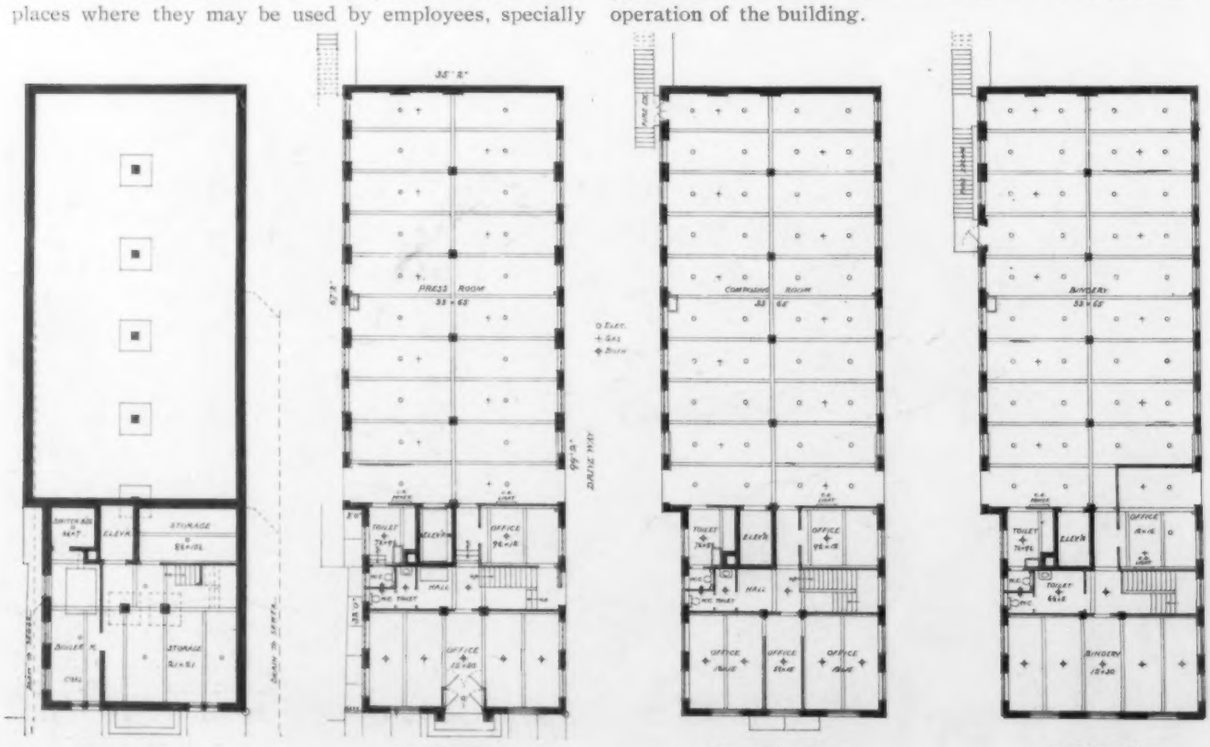
The building contains 47,320 cubic feet in the administrative section, built at a cost of 15 cents per cubic foot. The factory section contains 97,020 cubic feet and cost at the rate of 13½ cents per cubic foot. The total amount of the contract cost was $20,250.

The evolution of the so-called "loft-building" type of structure, the sort used by one type of printing plant, from fire traps to fire-safe buildings, marks a forward step in the progress of the fight to conserve life and property by combating fire dangers. When the building is to be occupied by one concern, however, and built for the specific purpose of manufacturing a certain product, there is generally enough data at hand to produce a well designed and constructed building, protected against general fire hazards and the special hazards of the particular branch of manufacturing housed. The Chew Printing House is as fireproof as it can be made, both in the structure itself and its equipment. It is provided with an automatic sprinkler system, fire alarm system, and other similar appliances for the protection of the occupants and contents. The automatic sprinkler, as we have called attention to before, is almost the only absolutely dependable means of preventing the spread of fire, and this device as installed to-day practically never fails to accomplish its purpose, and at the same time materially reduces the cost of carrying fire insurance. Chemical extinguishers have been placed in convenient places where they may be used by employees, specially drilled, in case an incipient blaze is discovered. Their value has been demonstrated in saving stock from damage by water.

Composing Room

To aid in maintaining higher standards of safety, every floor has two exits remote from each other, leading to a passage which in turn ends on the street. Outside fire-escapes have been provided with balanced stairway (*i. e.*, a stairway which drops automatically when it is stepped upon) at the lower level, and this outside stairway is extended to the roof.

Good ventilation has a direct effect on the efficiency of those employed within the printing house, as well as in all classes of factories. When oxygen is replaced by other gases or consumed, the air becomes unfit for respiration and almost incapable of supporting life. It has been estimated that from forty to fifty per cent of the deaths which occur are attributable to the morbific influence of foul air. Realizing the importance of good ventilation for their employees, the owners of the Camden, N. J., plant we are discussing have installed a process of diluting the confined foul air with pure, fresh air properly warmed and properly humid. This has been accomplished without the production of drafts and is a factor in the successful operation of the building.



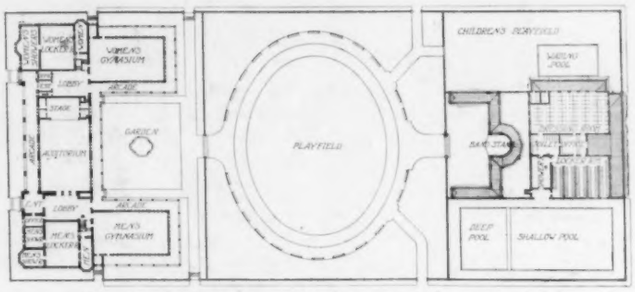
Basement Plan — First Floor Plan — Second Floor Plan — Third Floor Plan

Printing House of Sinnickson Chew & Sons Co., Camden, N. J.
Henry A. Macomb, Architect

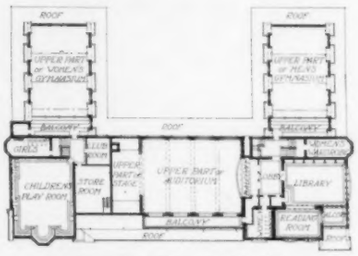
Public Bathing Establishments.

ILLUSTRATING RECENT WORK IN REPRESENTATIVE AMERICAN CITIES.

BATHING has been considered a necessary and enjoyable practice by civilized people of all times, even among those of the earliest days of which we have any record. The ruins of the great public baths endowed by the Roman emperors, and made the center of the Roman citizens' activities, are to this day a source of marvel and pleasure to antiquarians and students of history.



Ground Floor Plan of Field House and Plot Plan



Second Floor Plan of Field House

The same demand for bathing facilities for the citizens of large centers of population has continued to make large, public bathing establishments a feature of European life. In America, on the other hand, we have always had different ideals of living from those of the European and, consequently, our development in many respects has differed widely from theirs. Thus, contrary to European conditions, where only the homes of the richer people have bathrooms, even small and unpretentious American city and suburban houses have a bathtub supplied with hot and cold water. American hotels, likewise, have always furnished excellent bathing facilities for travelers, and with the present high standard of hotel operation in this country, the patrons of metropolitan hotels have come to expect a private bathroom with each suite, or single sleeping room. For these reasons the public bathing establishment has not been an important or, in fact, a necessary feature of our lives, and consequently public baths are not well known to us, save for such as the Russian and Turkish baths operated in the larger cities as private undertakings.

In the large American cities, however, with the influx of a constantly increasing foreign-born population, the conditions that obtain in European cities are beginning to be felt here, and measures must naturally be taken to afford these people ample bathing and recreation facilities to safeguard public health. It is also evident upon investigating the living conditions of large masses of people employed in mechanical and industrial pursuits that their bathing facilities are

General View of Bathing Pool and Field House, Pulaski Park, Chicago, Ill.
W. Carbys Zimmerman, Architect

Shower Room in Locker Building, Pulaski Park

not of the best, in many cases being limited to the use of a pail and sponge. Such handicaps are not conducive to bodily cleanliness, especially when it is remembered that the majority of these laboring people are of European extraction among whom private bathing is not adhered to so rigorously as among American people.

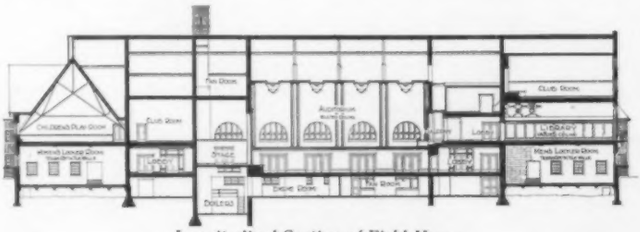
These conditions, gradually asserting themselves, are not passing unnoticed by the public mind and we are now seriously thinking of means to raise the standard of living of the working masses and to supply them with facilities which will make clean living attractive and easy for them to accomplish.

The architect, to whose attention this problem will naturally be brought for solution, is interested in the precedent which any existing baths may establish to influence the design and construction of those which will be built to suit American conditions, in knowing how nearly the conditions fulfilled by the European baths agree with those in America, and what has already been done in this country in a serious endeavor to create an accepted type for these structures.

A great number of baths have been erected in the larger cities of the Continent and England, which embrace the various kinds of bathing arrangements such as single tub and spray baths, plunge baths, and swimming pools, as well as hot air and vapor baths. Principal among these may be mentioned the Luebecker Thor People's Baths in Hamburg, the Guentzbad in Dresden, and the Mueller Volksbad in Munich. These are all large establishments provided for the accommodation of the people and the traveling public. They are all larger and of a more monumental character than present American needs would seem to demand, inasmuch as the practice which has been established in cities like New York, of dividing the population into a number of geographical units and serving them with smaller buildings, has worked out to good advantage.

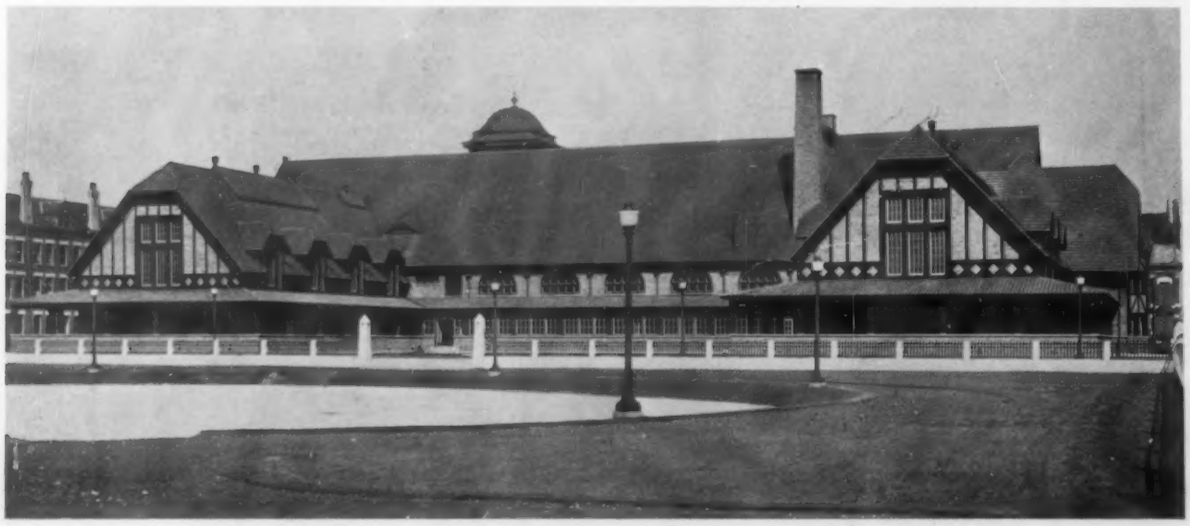
The need in America, however, is not confined to indoor bathing accommodations, our extended heated term making outdoor pools desirable, especially in centers removed from the ocean or unpolluted rivers. In the three establishments illustrated in this paper there are seen three different types that have recently been erected in representative American cities, to meet varying demands.

The development of Pulaski Park in Chicago has been effected with the intention of serving many more interests of the people in its vicinity than bathing, but for the great majority of its patrons perhaps this will be its chief service.



Longitudinal Section of Field House

It is located on a site of 3.8 acres bounded by Noble, Blackhawk, Cleaver, and Bradley streets, in one of the most densely populated districts of the city, the predominating nationalities being Polish and Bohemian. The devel-



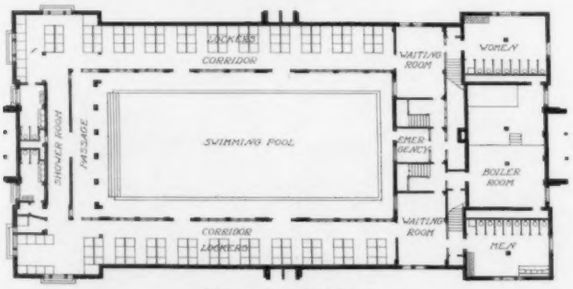
View of Field House from Play Field, Pulaski Park, Chicago, Ill.
W. Carbys Zimmerman, Architect

opment comprises a field house, playground, locker building, and swimming pools, and represents an expenditure of $695,000 exclusive of grading and planting, distributed as follows: land, $450,000; field house, $175,000; locker building and swimming pools, $70,000.

The play field is situated between the field house and locker building and provides a running track, baseball diamond, etc., for boys, while in the corresponding space to that occupied by the swimming pool, on the other side of the locker building, is arranged a playground for girls and young children, with the customary apparatus, wading pool, sand court, etc., served by a large space in the locker building, divided into small compartments for dressing.

The outdoor pool and locker building is restricted to the uses of men and boys and provides accommodations for five hundred per hour. The pool is divided into two parts to meet the demands of the bathers, whether they desire shallow or deep water. The deep pool is 40 feet wide and 60 feet long, while the shallow one is 60 feet wide and 180 feet long.

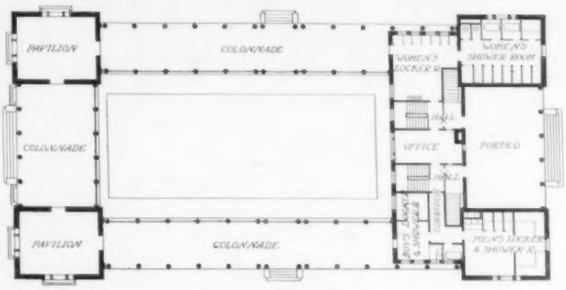
The field house, as may be seen from a study of the plans reproduced herewith, is devoted mainly to gymnasia for men and women with the attendant locker, shower, and toilet rooms. The respective gymnasia are located at opposite ends of the building in wings with separate entrances from the street so that the men and women may enter and leave the building independent of each other.



Plan at Level of Pool

View of Pool, Public Bath in the Grove, Kansas City, Mo.
Wilder & Wight, Architects

Public Bath in the Grove, Kansas City, Mo.



First Floor Plan

The space devoted to showers is divided into two rooms, one containing individual compartments, formed by thin partitions, the other being left entirely open. The locker and shower rooms are 16 feet high with enameled tile walls and ceilings. The showers are overhead fixtures, supported from the side walls and individually controlled by the bather to obtain any desired temperature.

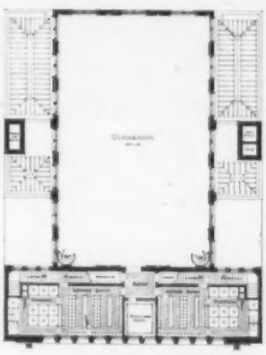
The remainder or central portion of the field house is occupied by a large auditorium, reached by way of an ample lobby from the main entrance in the tower. It occupies two stories in height and has grouped around it on the second floor a library, children's play room, and small club rooms, making the building one of great service in a crowded city district as a community center.

The building is heated by a two-pipe vacuum system for direct radiation in all rooms, fresh tempered air being admitted to the auditorium and stage, library, children's play room, club rooms, and locker and shower rooms. Exhaust is affected from the shower and locker rooms by mechanical means, but natural vents are relied upon for the exhaust of the other rooms.

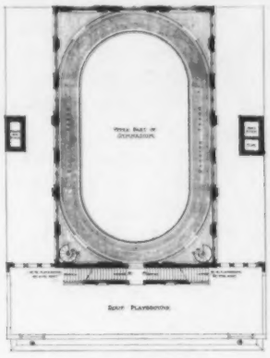
The Bath in the Grove, Kansas City, similarly furnishes a center of recreation in a park, but is intended primarily for use only in the summer months. It consists of a large pool, constructed below the level of the natural grade and surrounded on three sides by open pavilions which make it specially

desirable for aquatic sports because of the ease with which a large number of spectators can be accommodated. The pool is built with a sloping bottom, ranging from a depth of 2 feet at the shallow end to 9 feet at the deep end to suit the needs of both swimmers and non-swimmers. In the long passageways located at either side of the pool under the colonnades, lockers for men and women respectively are provided. These are lighted by windows facing the pool and vault lights set in the pavement of the colonnades. The floor plans reproduced herewith show the comparative areas devoted to showers for men and women, waiting rooms, attendants' rooms, and the general scheme of operation.

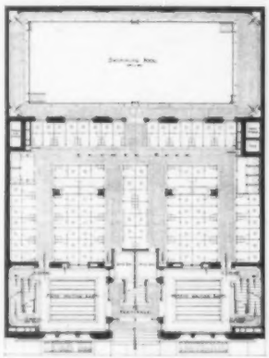
Above the base course, which is stone, the entire building is constructed of glazed terra cotta. The roofs are covered with tile and finished with an Italian detailed cornice showing open rafters. A modeled frieze to suggest the purposes of the building occurs directly beneath the cornice and furnishes an attractive piece of decoration.



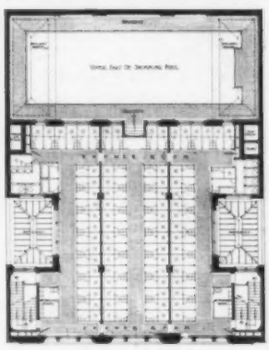
Third Floor Plan



Fourth Floor Plan



First Floor Plan



Second Floor Plan

The third example, the Public Bath and Gymnasium for the City of New York, more nearly corresponds in service with the European baths previously referred to, although it is much smaller than any of those mentioned. It is intended for use throughout the year and means to provide bathing accommodations of a cleansing nature to the inhabitants in the part of the city in which it is located, perhaps more than to provide a place for people to enjoy swimming. It is operated in connection with a gymnasium, where under experienced instructors those desiring to do so may embrace the means of building up their physique to counteract the dangerous and confining circumstances of the tenement districts in which they live.

Shower and Dressing Rooms

Swimming Pool

Public Bath and Gymnasium for the City of New York, West 28th Street, New York

William Emerson, Architect

DETAIL OF TOWER AND CLOISTER

WEBB HORTON MEMORIAL PRESBYTERIAN CHURCH, MIDDLETOWN, N. Y.

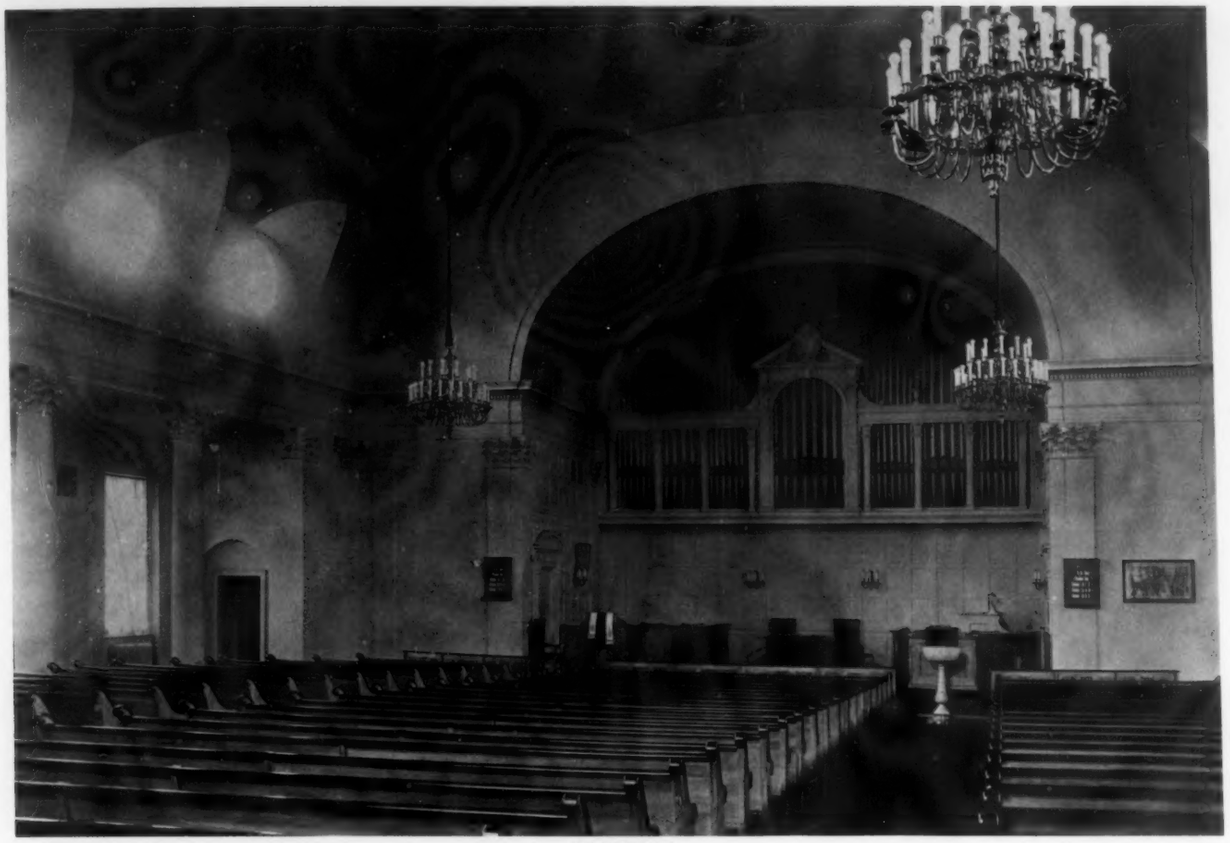
CARRÈRE & HASTINGS, ARCHITECTS

STREET FACADE

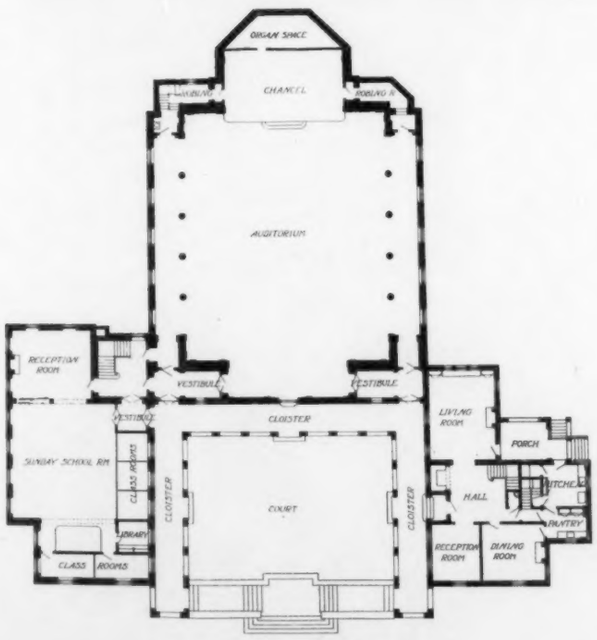
REAR FACADE

WEBB HORTON MEMORIAL PRESBYTERIAN CHURCH, MIDDLETOWN, N. Y.

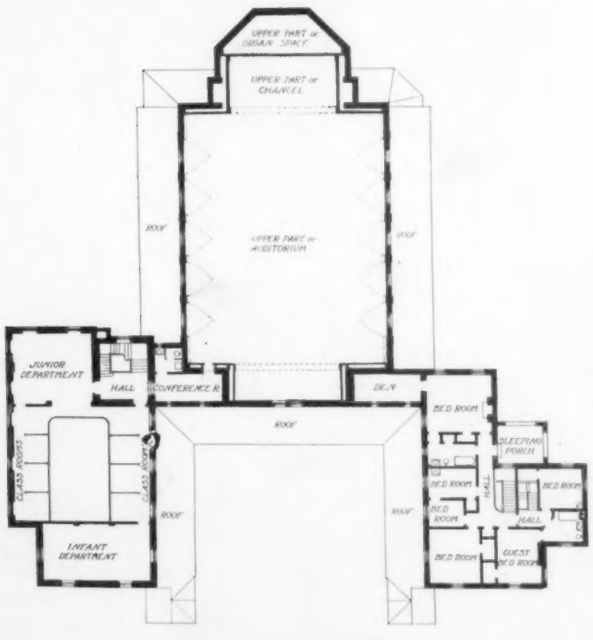
CARRÈRE & HASTINGS, ARCHITECTS



AUDITORIUM



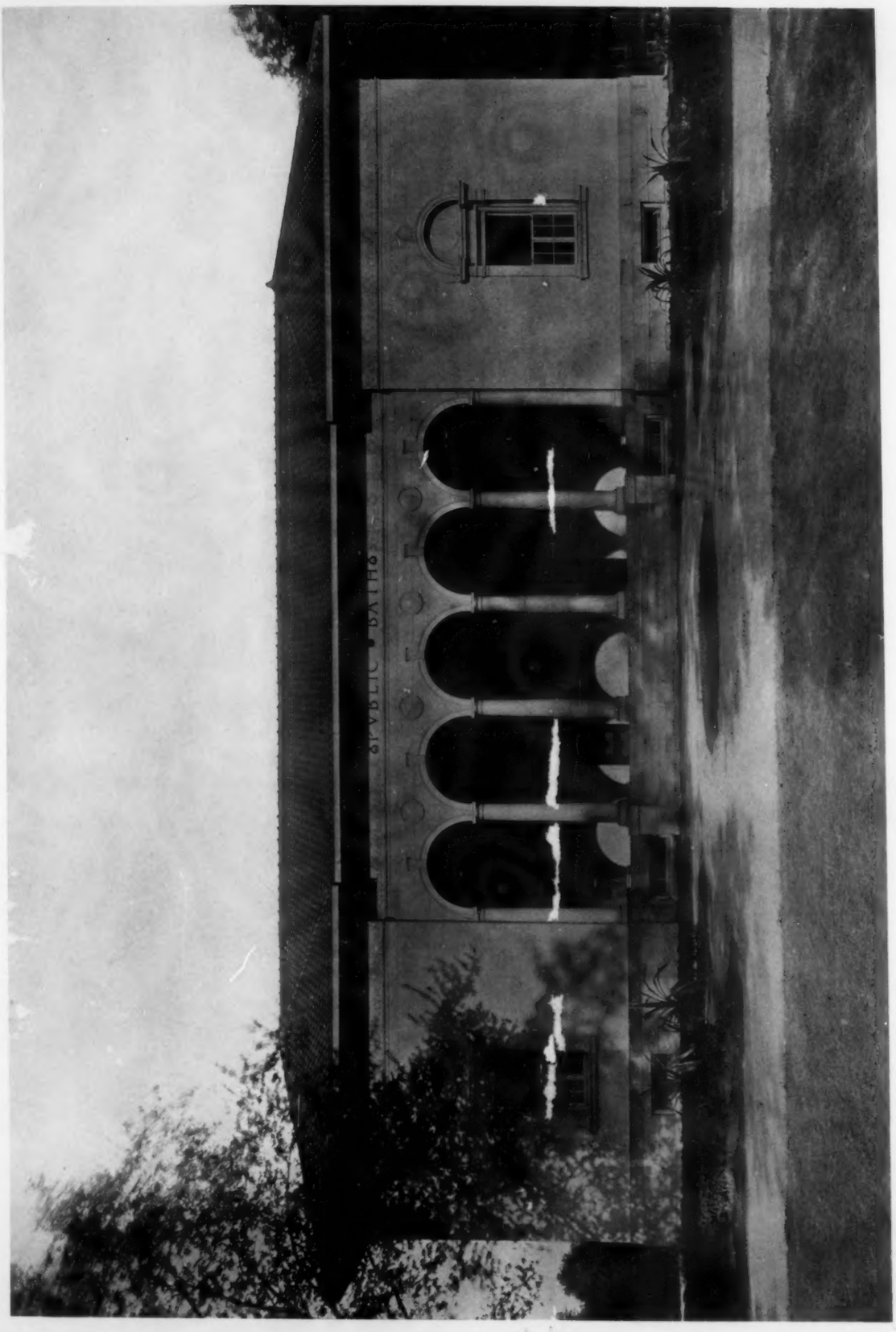
FIRST FLOOR PLAN



SECOND FLOOR PLAN

WEBB HORTON MEMORIAL PRESBYTERIAN CHURCH, MIDDLETOWN, N. Y

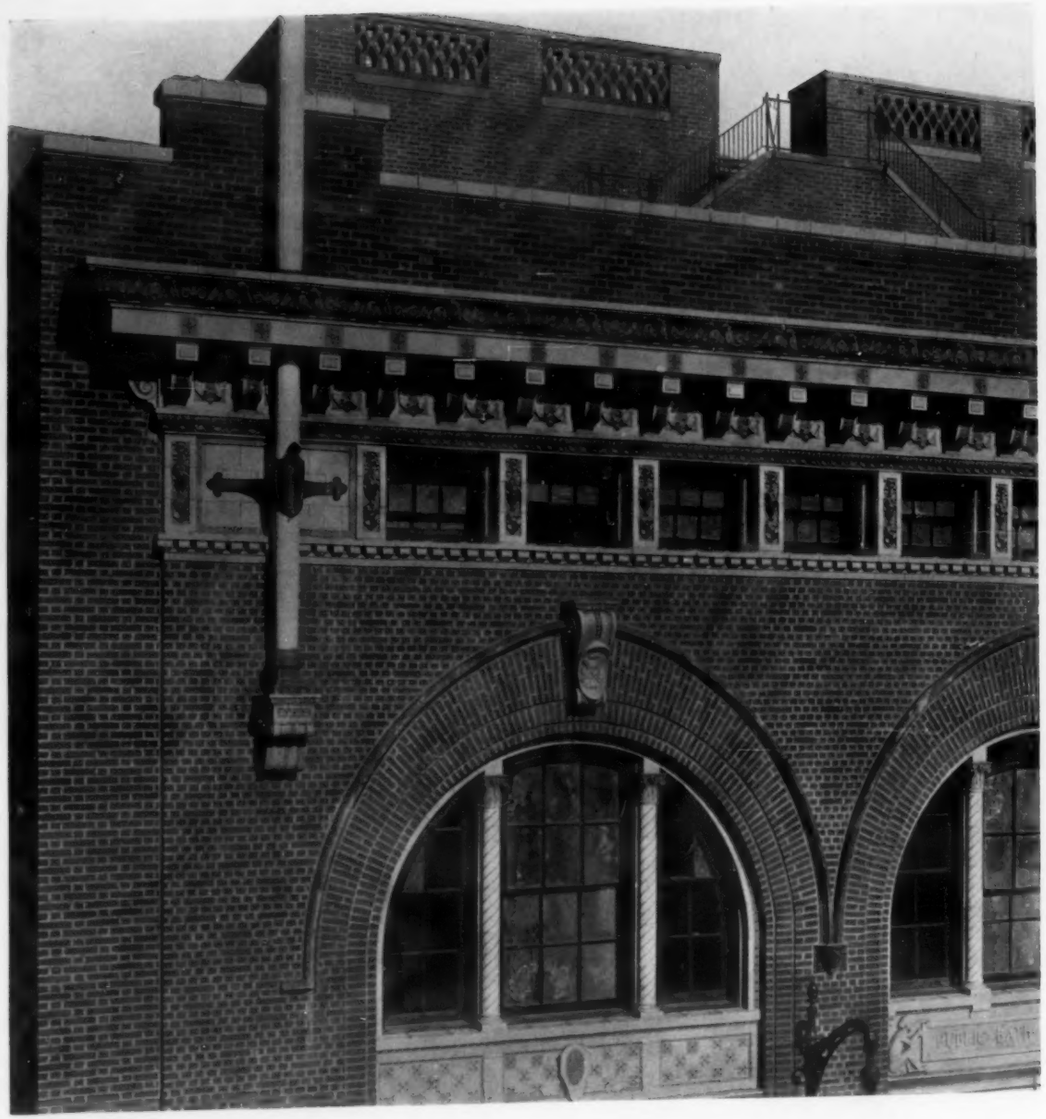
CARRÈRE & HASTINGS, ARCHITECTS



PUBLIC BATH IN THE GROVE, KANSAS CITY, MO.
WILDER & WIGHT, ARCHITECTS

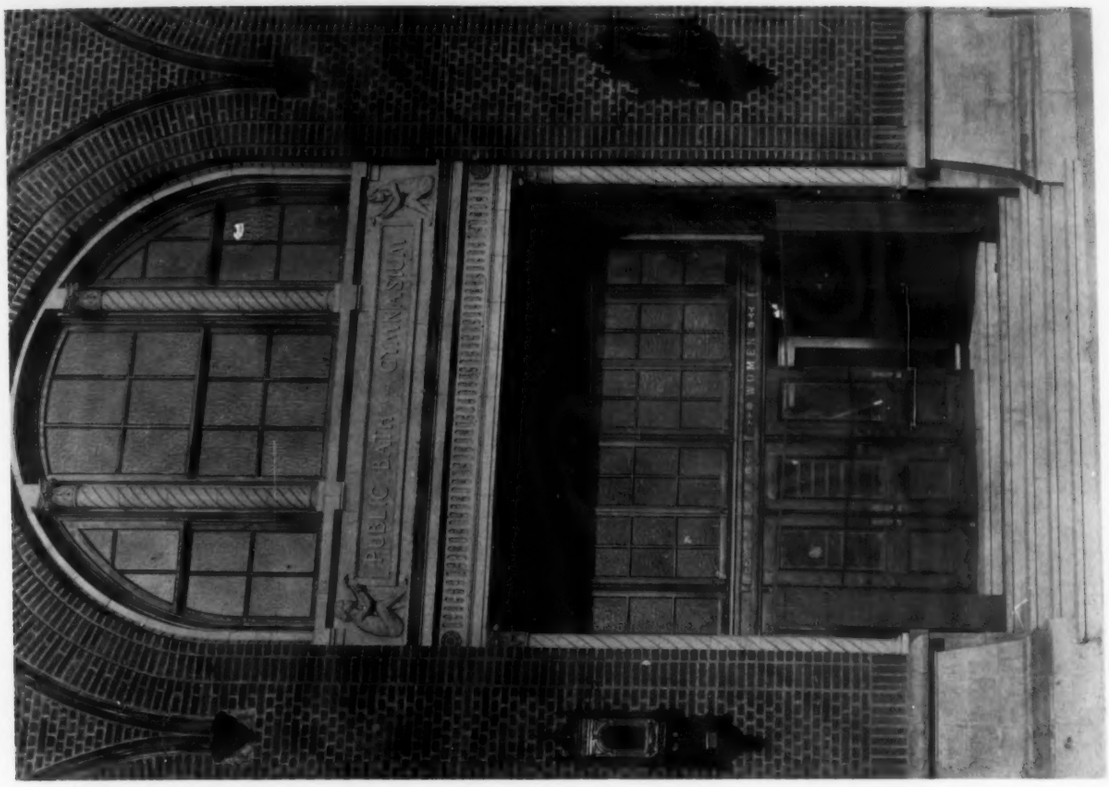
PULASKI PARK FIELD HOUSE, CHICAGO, ILL.

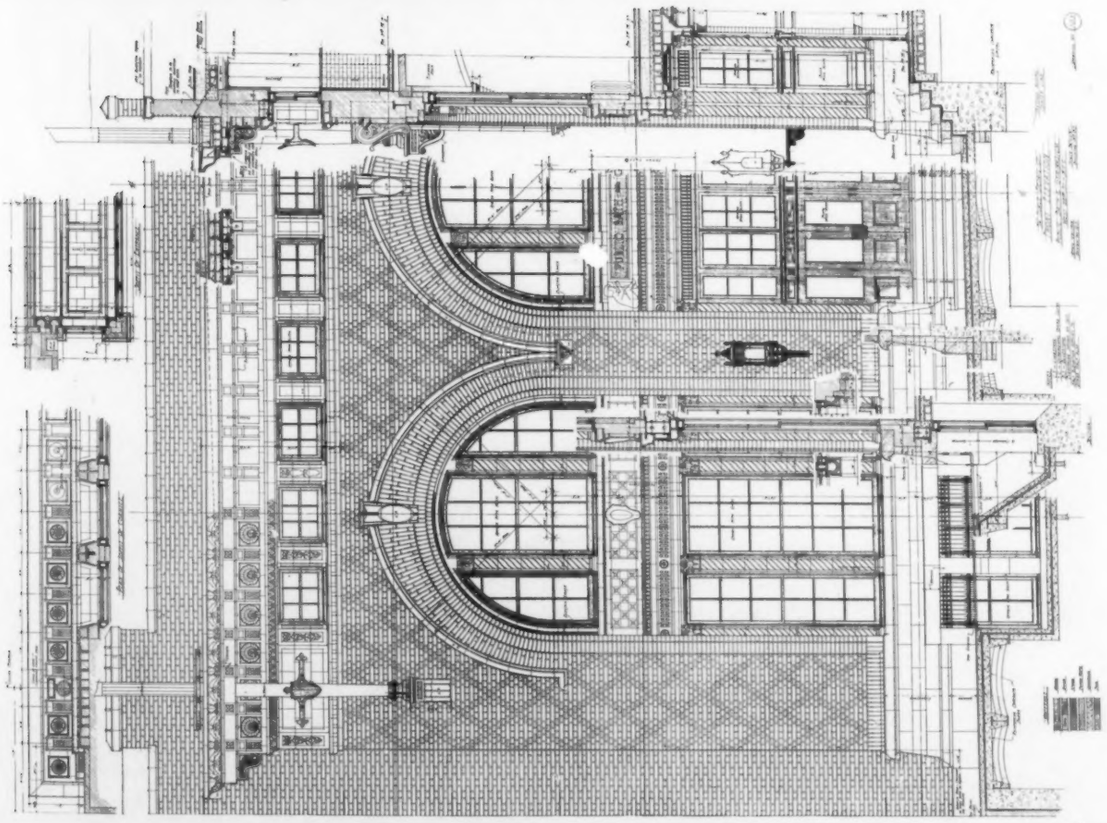
W. CARBYS ZIMMERMAN, ARCHITECT



PUBLIC BATH AND GYMNASIUM, FOR THE CITY OF NEW YORK, WEST 28TH STREET, NEW YORK, N. Y.

WILLIAM EMERSON, ARCHITECT



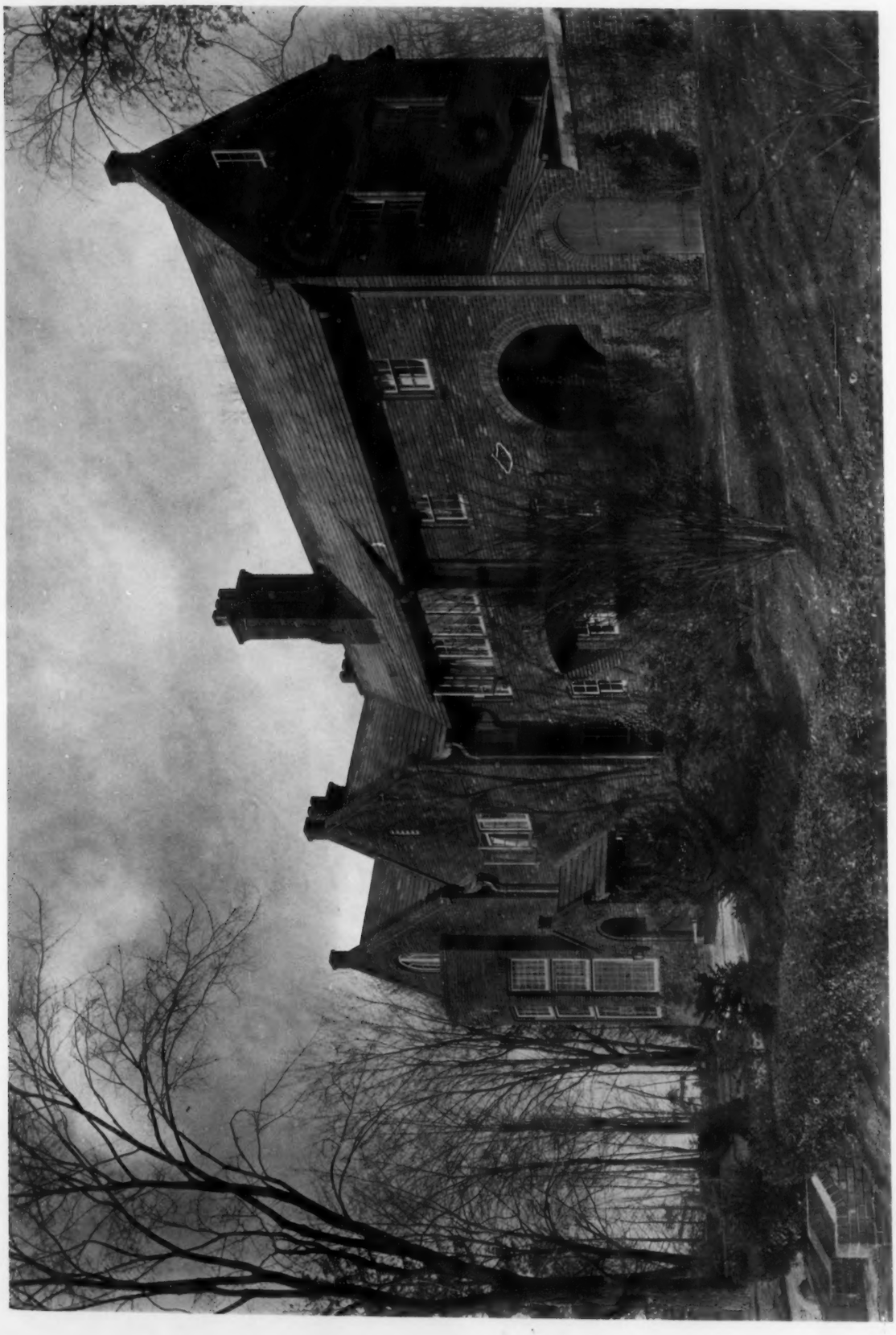


PUBLIC BATH AND GYMNASIUM, FOR THE CITY OF NEW YORK, WEST 28TH STREET, NEW YORK, N. Y.

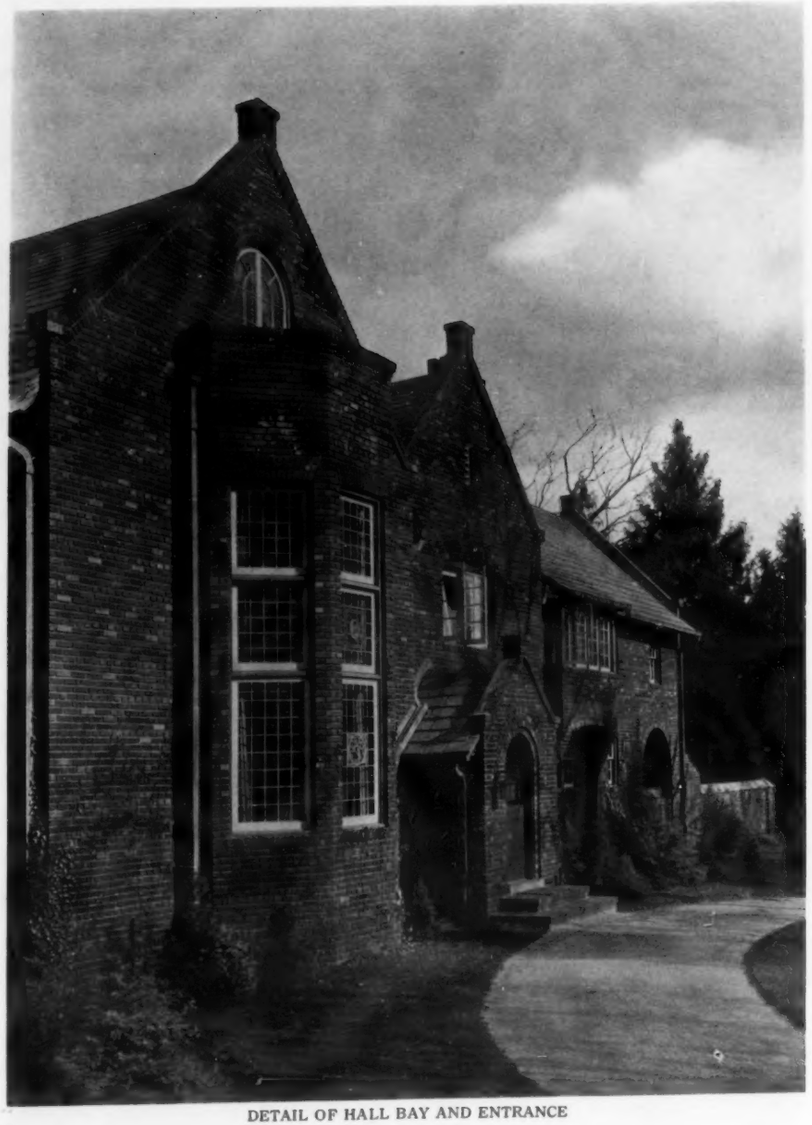
WILLIAM EMERSON, ARCHITECT

HOUSE OF CHARLES A. CASS, ESQ., ARDSLEY PARK, N. Y.

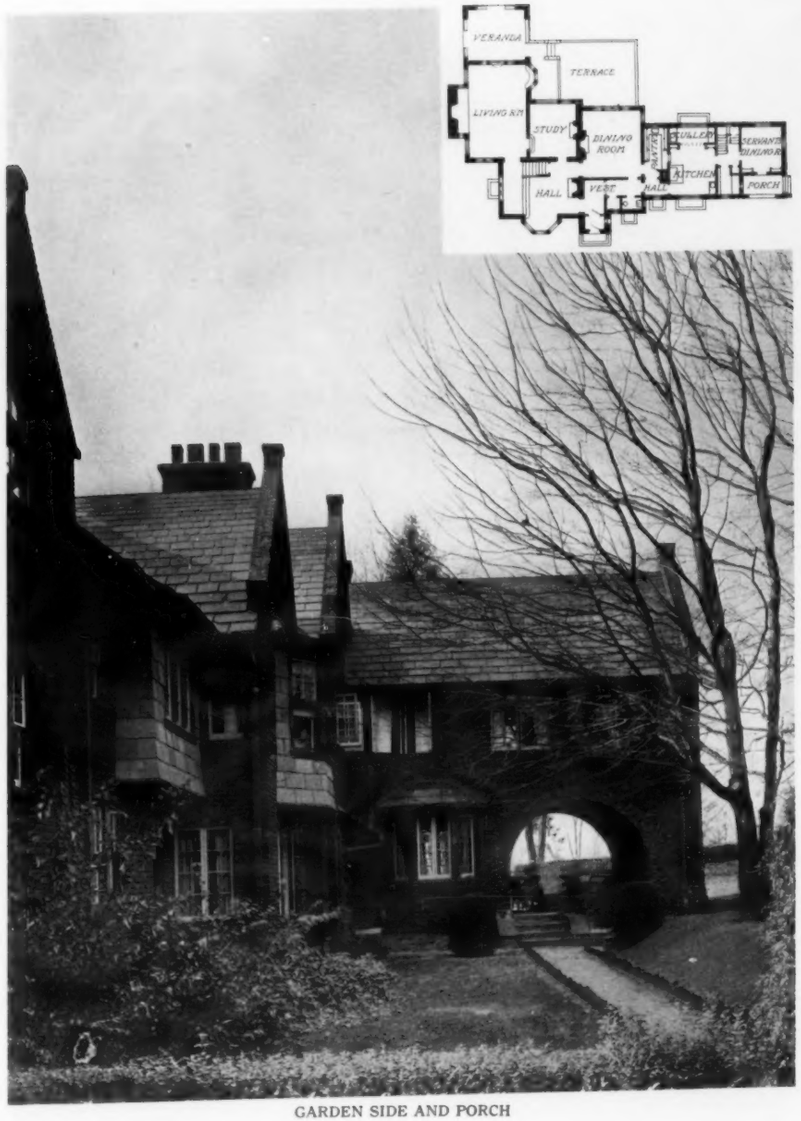
WILSON EYRE & McILVAINE, ARCHITECTS



HOUSE OF CHARLES A. CASS, ESQ., ARDSLEY PARK, N. Y.
WILSON EYRE & McILVAINE, ARCHITECTS



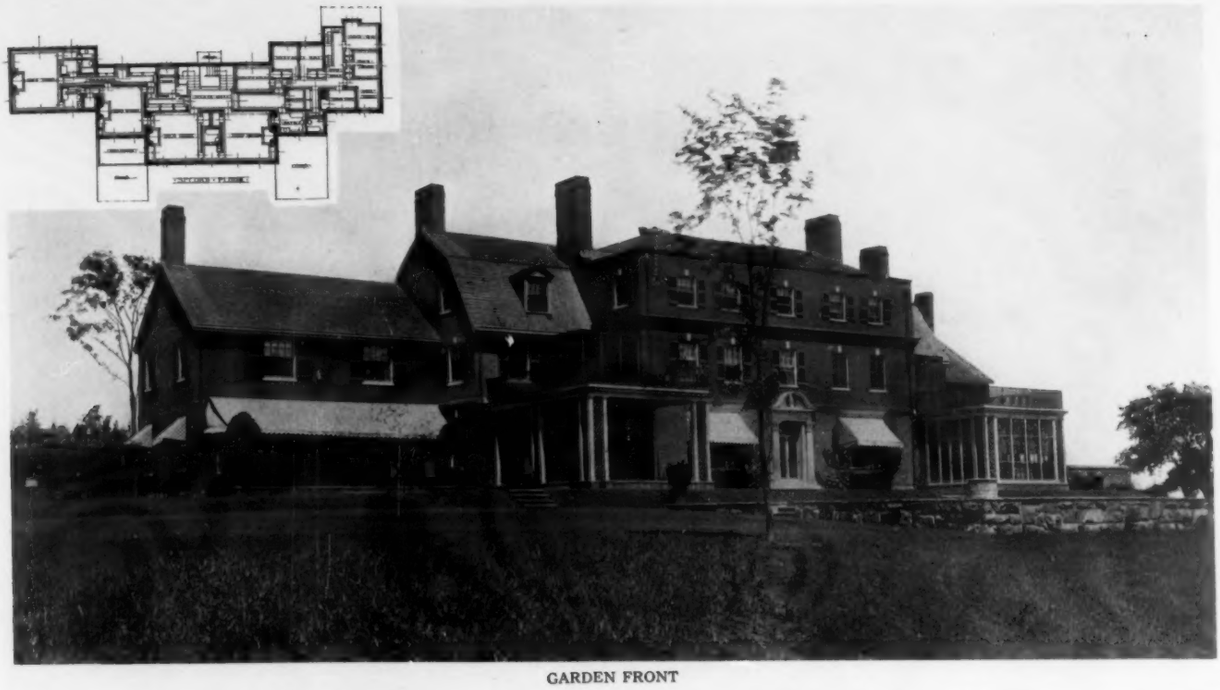
DETAIL OF HALL BAY AND ENTRANCE



GARDEN SIDE AND PORCH

HOUSE OF CHARLES A. CASS, ESQ., ARDSLEY PARK, N. Y.

WILSON EYRE & McILVAINE, ARCHITECTS

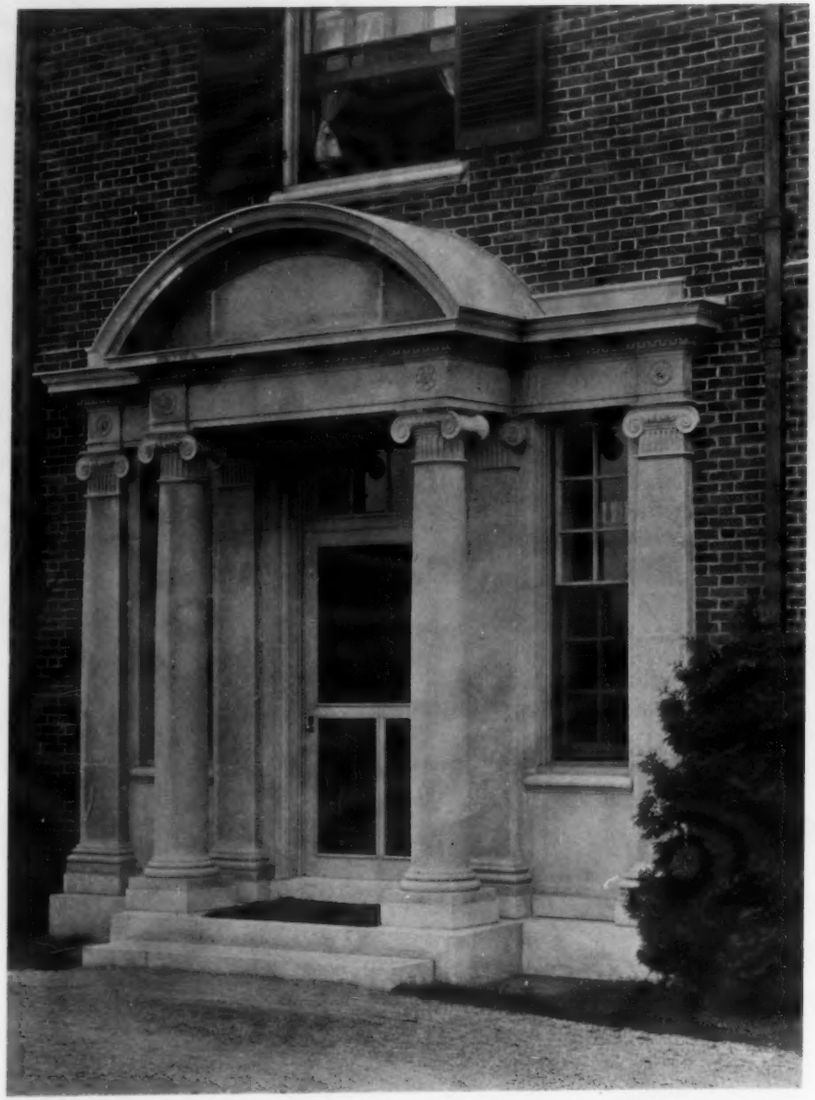


GARDEN FRONT

ENTRANCE FRONT

HOUSE OF GEORGE S. MANDELL, ESQ., HAMILTON, MASS.

WILLIAM G. RANTOUL, ARCHITECT



DOORWAY ON ENTRANCE SIDE

DOORWAY ON GARDEN SIDE

HOUSE OF GEORGE S. MANDELL, ESQ., HAMILTON, MASS.

WILLIAM G. RANTOUL, ARCHITECT

DINING ROOM

LIVING ROOM

HOUSE OF GEORGE S. MANDELL, ESQ., HAMILTON, MASS.

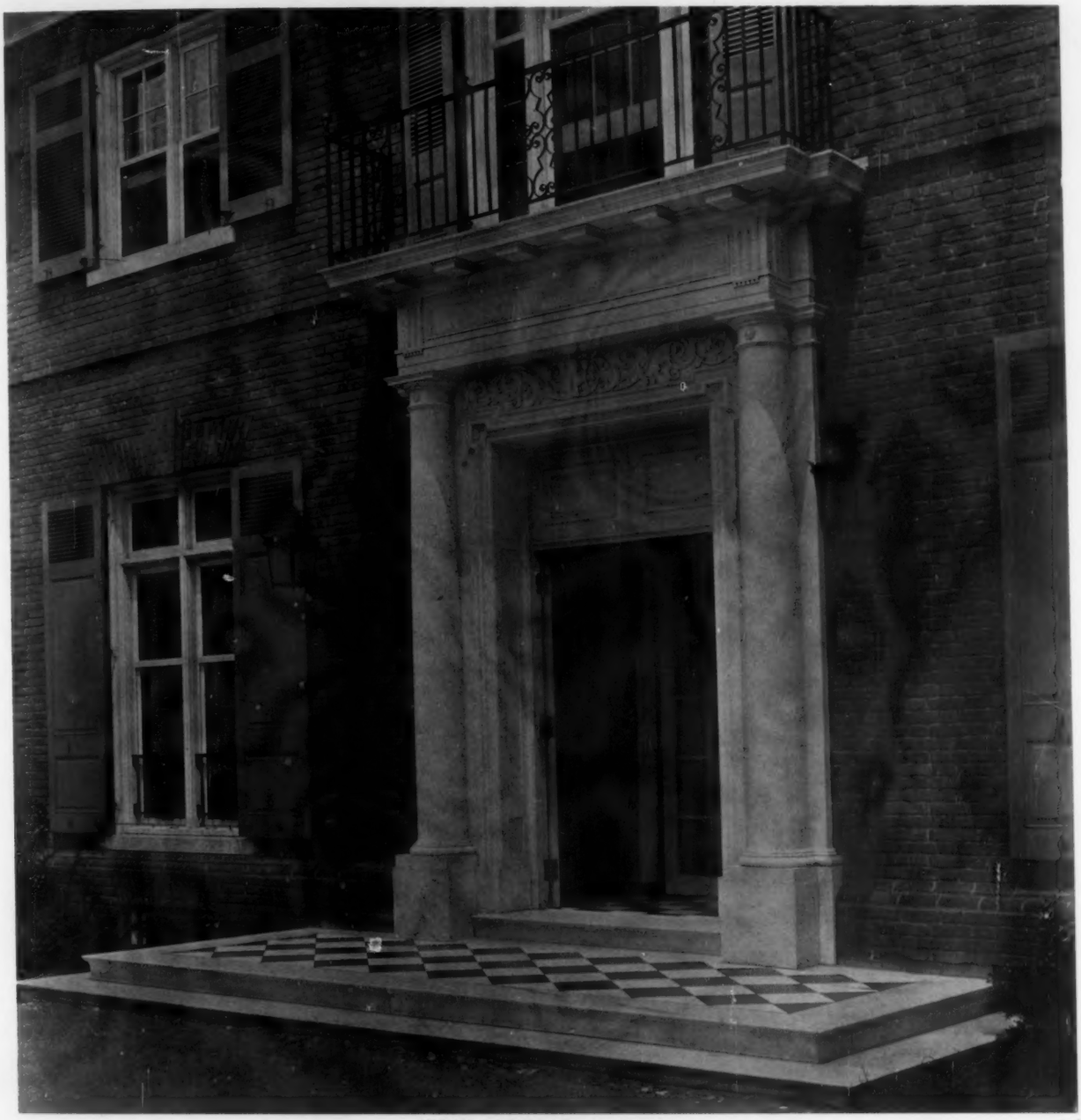
WILLIAM G. RANTOUL, ARCHITECT

GARDEN FRONT

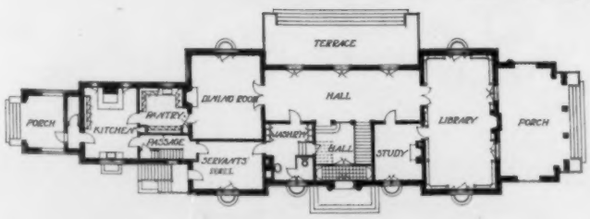
ENTRANCE FRONT

HOUSE OF R. LANCASTER WILLIAMS, ESQ., ECCLESTON, GREEN SPRING VALLEY, MD.

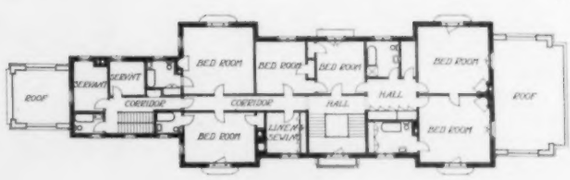
LAURENCE HALL FOWLER, ARCHITECT



DETAIL OF ENTRANCE DOORWAY



FIRST FLOOR PLAN



SECOND FLOOR PLAN

HOUSE OF R. LANCASTER WILLIAMS, ESQ., ECCLESTON, GREEN SPRING VALLEY, MD.

LAURENCE HALL FOWLER, ARCHITECT

The American Theater.

ITS ANTECEDENTS AND CHARACTERISTICS.

By HUGH TALLANT.

PART I. THE THEATERS OF GREECE, ROME, AND THE RENAISSANCE — (Continued).

THE old wooden theater of Dionysus seems to have served every purpose for upwards of a hundred years. At all events, it was not replaced by a stone building until towards the middle of the fourth century B.C.,* and even then its reconstruction seems to have been due to sociological rather than to technical demands. The Greek drama was not yet so changed in character as to require a *different* setting from that of the Age of Pericles, and it certainly did not merit a *nobler* setting. On the contrary, the new plays were so far inferior to the old that their presentation at the annual contests was beginning to be interspersed with reproductions of the earlier masterpieces — a confession of weakness previously unknown. Under such conditions the stone theater at Athens and those which shortly followed it in other Hellenic cities were merely a glorified expression of the same dramatic requirements which had led to the erection of their wooden prototypes. They were the natural result of increasing prosperity and facilities, combined with civic pride and artistic emulation. They represented a great advance in material splendor, but added little to the practical convenience of either actors or spectators.

The new theater was erected upon the same site as the old, in spite of the fact that the dimensions, shape, and orientation of the property were anything but ideal. Immediately to the south stood the ancient temple of Dionysus, dating back almost to the Heroic Age,† and far too venerable a monument to be either removed or dismantled, although it formed an inconvenient barrier to the extension of the theater in this direction. However, the architects took advantage of every inch. In order to obtain increased space for the new skené, which was to be wider than the old, they crowded its southern wall against the very corner of the temple, and at the same time shifted the orchestra a few yards to the northwest. To offset this last change, which cramped the auditorium on the south, they terraced out the ikria to the west by means of double retaining walls with cross buttresses, and also cut down into the rock of the Acropolis on the north in order to add a few rows of seats at the rear. Even so, the auditorium remained irregular and unsymmetrical, and afforded no greater seating capacity than before, if we can believe the half of what we are told.‡ Worst of all, it faced towards the south — a most undesirable orientation, because the spectators thus had the light in their eyes, besides being oppressed by the fierce heat of the midday glare in the bowl.§

Yet with all its defects the Dionysiac Theater still remains the oldest, the most historic, and the most interesting building of its kind. Its original arrangement, according to the restoration of Messrs. Dörpfeld and Reisch, is shown in Fig. 4 (THE BRICKBUILDER, December, 1914). The general irregularity of the layout is only too painfully apparent, but even more striking is the apparent defectiveness of the sight lines. As will be seen, the sweep of the concentric seats was in the form of a semicircle with the ends prolonged by straight lines, so that the spectators at the two sides of the auditorium faced not towards the proskenion, but parallel to it. In fact, they must have found a considerable portion of the proskenion wholly cut off from their view by the projecting wings of the stage-building. Various explanations have been suggested to account for this seeming defect. It has been pointed out that "in Greek theaters, where the choral and musical contests outnumbered the dramatic, the orchestra was always the most important part of the building";* also that "the theater in antiquity was by no means reserved for scenic representations, but was used for public gatherings of the most varied character."† These are, however, merely excuses, which might palliate, but certainly would not condone, so obtrusive a defect. Moreover, the architects of other Greek theaters, far from trying to minimize the difficulty, seem to have been determined to aggravate it. They usually constructed their tiers of seats in the shape of a semicircle prolonged, not by straight lines, but by *a continuance of the same curve*, so that the inside boundary of the auditorium formed about two-thirds of a circle. This formation obliged the unlucky occupants of the side seats to face actually away from the proskenion. So pronounced an arrangement must have been dictated by good and sufficient reasons; for the Greeks were above all things a people of logic and sound common sense. The most plausible explanation seems to be that at the time when the earliest stone hemicycles were erected very little even of the play was presented upon the proskenion. It will be remembered that the Greek drama originated in a dialogue between actor and chorus, to which was subsequently added the representation of personages and events. The performance thus came to consist of three features; namely, singing and dancing by the chorus, dialogue between the chorus and the players, and dramatic action on the part of the players alone. The theory is that at the time under consideration — that is towards the close of the fifth century B.C. and the beginning of the fourth — the players were in the habit of descending to

* This estimate by Dörpfeld is accepted by Haigh. See "The Attic Theater," Chapter III. page 86.

† It is assigned by Dörpfeld to the sixth century B.C.

‡ Plato (Symph. 175, E) states that the wooden theater of his day seated over 30,000 people. The stone theater seated about 17,000.

§ Vitruvius (V, 3, 2) expresly warns architects against this danger.

* "The Attic Theater," Chapter III. page 93.

† "Pompeii and its Remains," by August Mau. Chapter XV. page 142. It will be remembered that when the Ephesians had become angered against Paul and his companions, "they rushed with one accord into the theater." Acts 19 : 29.

the orchestra level in order to carry on their dialogues with the chorus, and found it more convenient to remain there during the balance of the scene, rather than to pass repeatedly back and forth. Some authorities even argue that there was no stage at all, that the word "proskenion" was used to designate merely the space in front of the skené without reference to anything in the nature of a platform, and that the dramatic action took place entirely upon the ground. In either case, the actors are supposed to have performed, for the most part, either within or immediately behind the circle of the orchestra; they seldom withdrew to the proskenion before the end of the scene; and they were distinguished from the chorus merely by their costume and by their central position, as in modern opera. Thus the dramatic as well as the spectacular interest was located at or near the center of the orchestra. This region became the important objective, and in disposing the seats so as to face towards this point of view the designers of the early hemicycles were adopting an arrangement as practical and correct in the matter of sight lines as it was simple and effective in the matter of architectural scheme. As for the stage, it was probably nothing more than a low wooden platform with steps in front leading down to the ground. No material traces of such a construction have yet been discovered in the remains of any Greek theater; but pictorial representations occur in numerous vase paintings of the third century B.C., which have been discovered in the Grecian cities of southern Italy. Some of the paintings show the actors standing also on the ground, and in one case even mounting the steps. If a raised stage was so common at this time in the cities of Magna Græcia, it doubtless was not unknown in Attica; but whether it was used for serious as well as comic performances, and whether, in any case, it was customary in large theaters, are questions which modern antiquarian research has so far been unable to answer.*

Another point which strikes us in connection with the Theater of Dionysus is its enormous size. Nowadays a playhouse is considered "big" if it contains more than twenty rows of chairs on the ground floor or accommodates over 1,200 people. The Metropolitan Opera House in New York seats only 3,300. But the Hemicycle at Athens contained seventy-eight tiers of ikria and accommodated 17,000 spectators. This vast capacity was not imposed by

* The theory that there was no stage in the early Greek theater was first advanced in 1884 by Höpken in his treatise, "De theatro Attico." It is amplified and developed by Dörpfeld in "Das griechische Theater." The opposite opinion is maintained in "The Attic Theater," by Haigh and Pickard-Cambridge, who argue in favor of a low wooden stage. The further theory that the stone stage in later Greek theaters was intended to represent adjacent buildings, while the wall of the skené behind corresponded to the sky, seems almost too fantastic and far fetched for serious consideration. It is in flat contradiction to the statements of Vitruvius (V. 7. 2), Pollux (III. 4. 123), Phrynichus (page 163, ed. Lobeck), and of various classical writers mentioned by Richards in the *Classical Review* for 1891, page 97; and is rejected by recent authorities such as Mau ("Pompeii and its Remains," page 142) and Lechat ("Epidaure," pages 214–228).

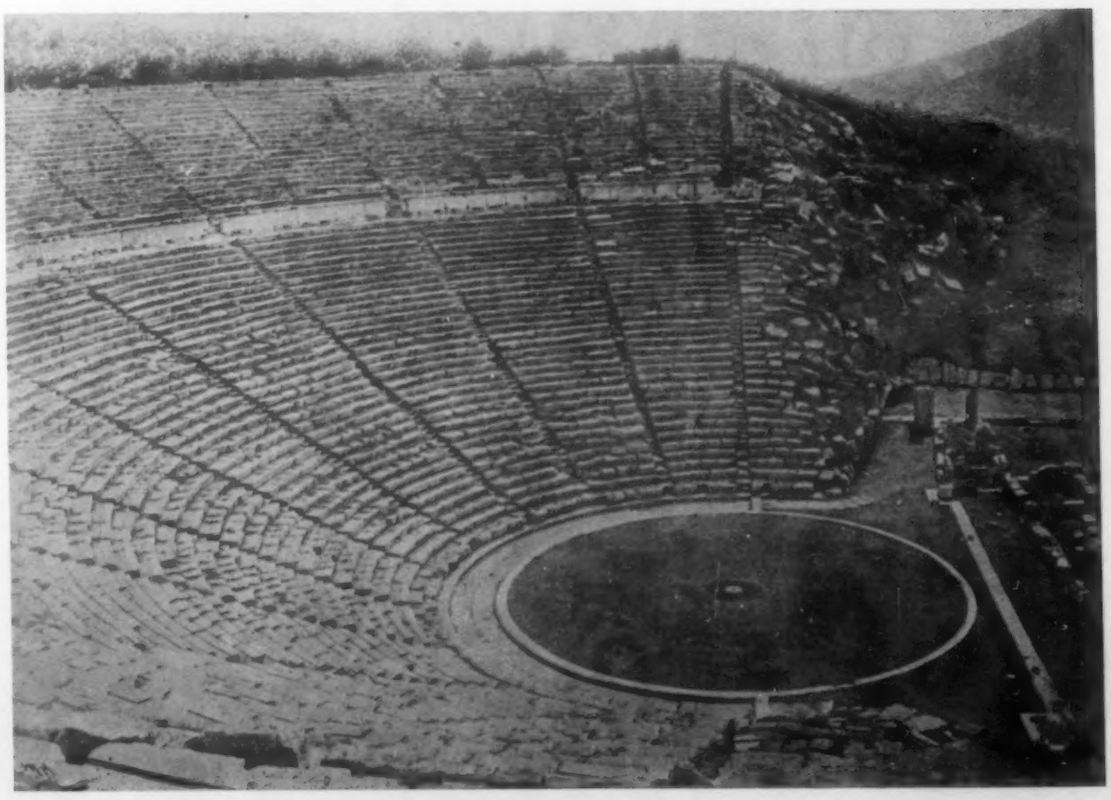


FIG. 5. RUINS OF THEATER AT EPIDAURUS, GREECE

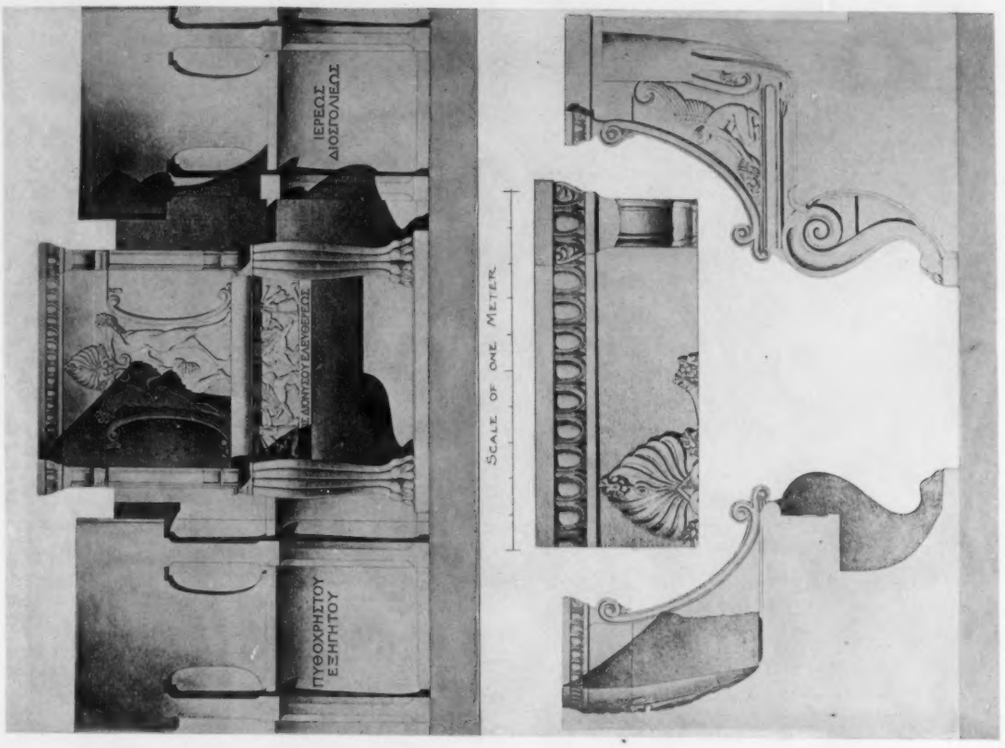


FIG. 7. RESTORATION DRAWING OF THRONE AND CHAIRS

FIG. 6. PRESENT CONDITION OF THE CENTER THRONE

DETAILS OF THE DIONYSIAC THEATER, ATHENS, GREECE

Fig. 8. Present Condition of Side Chairs, Dionysiac Theater

the intrinsic requirements of the drama. It was dictated wholly by social and economic conditions. The Athenian was essentially a man of intellectual capacity and aspirations. Books were scarce and were accessible only to a favored class. The average citizen was obliged to depend upon the annual dramatic performances for the satisfaction of his literary tastes. His anticipation and interest were correspondingly great. Moreover, as has already been described, he could obtain the price of admission for the asking, the annual deficit being successively apportioned among the wealthy men of the town. Under such conditions more than 17,000 places would doubtless have been filled could they have been provided. As it was, the auditorium covered the area of a modern city block, and imposed extraordinary demands alike upon the presentation and character of the play. Both actor and playwright were at their wits' end to make their production "carry" to the limits of the house. The actor built up his apparent stature by means of high-heeled buskins and a huge mask under whose conventional leer he could conceal a speaking trumpet. The playwright selected themes so trite that the spectators could supply the thread of the story from memory, if they now and then missed a word or a gesture of the play. Too often he went further and based his plot upon situations so crude that they could have been aired in the atmosphere of the police court without losing their propriety of flavor. Murder, revenge, matricide, parricide, suicide, and other assorted and unmentionable abominations enliven the famous tragedies of Orestes and Œdipus. Perhaps it is going too far to ascribe quite so heavy a responsibility to the fact that the Theater of Dionysus had a large seating capacity. The Athenian public must have liked this sort of stuff; otherwise they would not have applauded it, and the committee of five, who judged the contests, would not have premiated it. The fact is that Grecian drama was adapted to Grecian taste and Grecian morals, as well as to Grecian theaters. Four centuries were yet to elapse before the Christian Era.

The Theater of Dionysus has been so often and so fully described that a scant enumeration of details is all that is required in the present connection. The skené consisted of a main building, probably two stories high, with wings at each end projecting towards the auditorium. At first the exterior was plain, the decorative colonnade shown on the plan (Fig. 4) having been added some thirty years later. Beyond these general facts very little is known concerning the architectural effect, as subsequent changes, together with the wear and tear of centuries, have obliterated all definite indications. Even less is known with regard to the construction of the original orchestra, as it has been entirely destroyed in order to make way for the existing stone pavement. It probably consisted of a ring of flat stones filled in with well tamped earth, as at Epidaurus (Fig. 5), although this is wholly a matter of conjecture.

The main entrance was by way of the parodoi,* two openings to the right and left of the skené, which led to a horizontal walk-way carried around between the orchestra and the seats. This passage broadened out towards the ends, owing to the fact that the curvature of the auditorium was not concentric with that of the orchestra — an excellent arrangement which allowed for crowding towards the exits, and which was obviously intentional, as it occurs

* πάροδοι.

Fig. 9. Present Condition of Carving on Arm of Central Throne, Dionysiac Theater

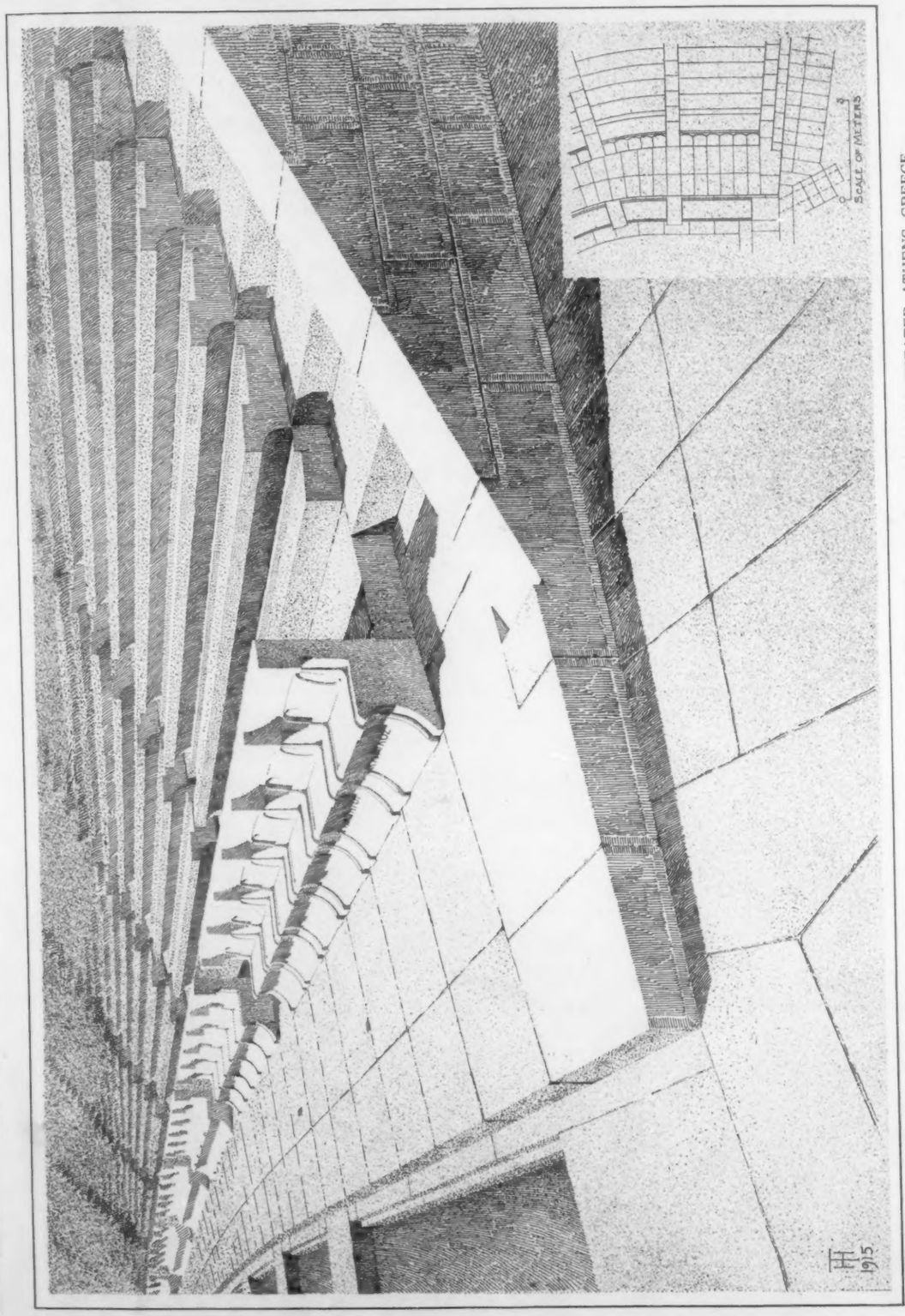


FIG. 10. RESTORATION DRAWING OF IKRIA, THRONES, AND ORCHESTRA OF THE DIONYSIAC THEATER, ATHENS, GREECE
BY HUGH TALLANT

also in the theater at the Piræeus. The radiating aisles running up the slope were extremely narrow (only 2 feet 3 inches in the clear) and must have obliged the audience to mount in single file. About halfway up they were intercepted by a horizontal passage known as the diazoma,* or girdle, which may have led to a special exit at its eastern end. The triangular shaped blocks of seats included between the diazoma and the aisles were known as kerkides, from the kerkis, a tapering rod used for weaving. As has already been mentioned, they were apparently designated by letters corresponding to those on the admission checks. The small temple adjoining the rear wall is of later date, having been constructed about B.C. 319 by Thrasyllus to commemorate his victory with a chorus of men.

The first row of seats consisted of individual thrones for the priests and other dignitaries, whose names are inscribed upon them. The excellence of the workmanship suggests that these chairs were part of the original construction, although the lettering is of a later date. The center throne was by far the finest. It was decorated on the arms by bas-reliefs representing boys engaged in a cocking-main — not an altogether sacerdotal subject according to modern ideas — and was protected by a baldachin carried on wooden posts, for which the holes are still in evidence. A similar awning was apparently stretched over the other chairs at a later date. The present condition of the center throne is shown in Fig. 6, a general restoration† of it and the flanking chairs in Fig. 7, the present condition of these chairs and the decoration on the arm of the central throne in Figs. 8 and 9, respectively.

* διάζωμα.

† This drawing is reproduced from the restoration by A. Defrasse in D'Espouy's "Details of Ancient Architecture."

The ikria were made of Peiraic limestone. The top of each step was divided into three parts: a front surface or seat 13 inches wide, a recess 2 inches deep and 16 inches wide for the feet of the spectator next above, and a further horizontal surface 6 inches wide. The steppings were 13 inches high, which, with the 2-inch recess for the feet, made a total of 15 inches — possibly a trifle low for a comfortable seat; but the Greeks were not a giant race, and, moreover, they came to the show provided with cushions to sit on. Apparently, too, they crowded into a width of 16 inches apiece, to judge from certain vertical marks on the face of the ikria, although the modern theater-goer considers himself abused if he is allowed less than 20 inches.

The steps in the radiating aisles were only 8 inches high on the vertical face, the extra 5 inches being taken up in the slope of the tread, which was well roughened to prevent slipping. A perspective view of the ikria, the thrones, and the edge of the orchestra is given in Fig. 10, and a section through the same,* which also shows the drain by which the rain water from the slope was carried off to the rear of the stage buildings and the construction of the steps in the radiating aisles in Fig. 11. This drain was open except for slabs of stones which bridged it opposite the ends of the radiating aisles, but the rebate in the rim suggests that it may have been protected by a grating. As will be seen, the first stepping behind the row of thrones was later cut away so as to accommodate a second row of temporary wooden chairs.

* The data for these drawings were obtained partly from "Das griechische Theater," by Dörpfeld and Reisch, partly from "Zeitschrift fur bildende Kunst," Vol. XIII, page 197, and partly from photographs which will be reproduced in the present connection.

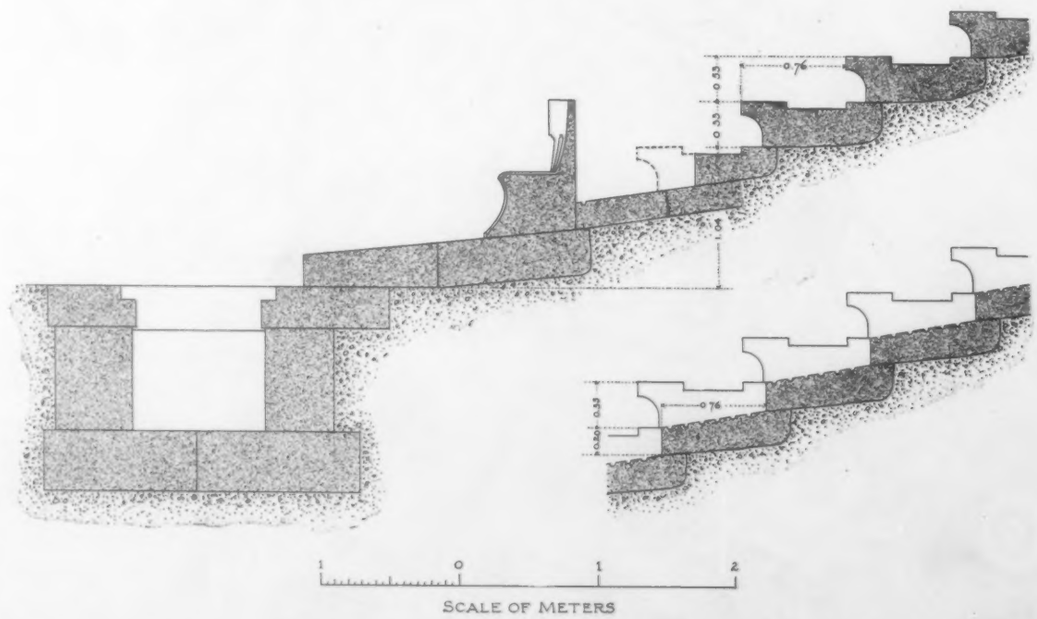
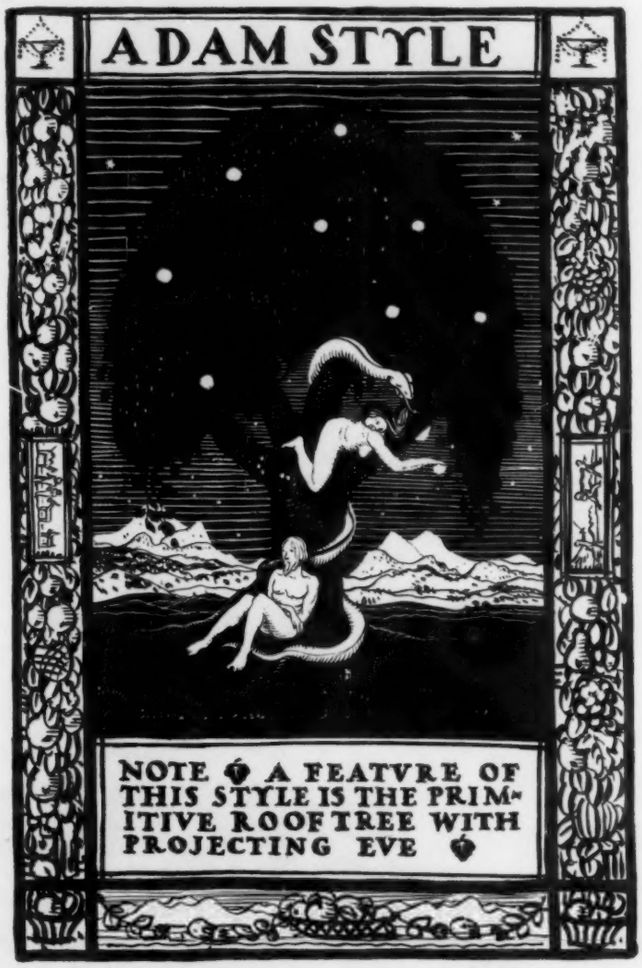


FIG. 11. SECTION THROUGH IKRIA AND RADIATING AISLE OF DIONYSIAC THEATER, ATHENS, GREECE

The Nomenclature of the Styles.

A HUMOROUS THEORY ILLUSTRATING IN CARICATURE FAMILIAR SCHOOLS AND PHASES OF ARCHITECTURE.

DRAWINGS BY ROCKWELL KENT. TEXT BY GEORGE S. CHAPPELL.



THE ADAM STYLE.

THIS style, the first known, may be called the Parent Style of all architectural schools. Little is definitely known concerning it, but ingenuity clears up several important points. We know that the site was first carefully prepared, an elaborate garden laid out and an orchard planted, one tree of which was of sufficient age to produce a luscious pippin before the foundations of the main house were actually begun. We read that "Adam delved and Eve span"—in other words, the man was the contractor and the lady her own architect, a span being the primitive unit of measure. It may be seen by consulting the elevation that the architect actually forgot the stairs! This is known as the Original Sin; all others are imitations. In detail this style is distinguished by great purity of ornament, expressed chiefly in forms derived from natural surroundings, leaves (notably of the fig and grape, in assorted sizes), and, in later periods, by a serpentine motive which eventually ran amuck, so to speak, and ruined the original conception. There has lately been an interesting revival of the Adam style in Ritz-Carlton hotels and Broadway playhouses.

THE GREEK FREEZE.

THE well-known observation, that "architecture is frozen music," was doubtless made in reference to the early Greek article, an example of which is portrayed herewith. The columns are built of cheesi-form sections called "drums," which, with the "flutes" that accompanied them, probably furnished the music before the Big Wind of 46 B.C. silenced them forever. This type persists in cold storage form and shows amazing vitality considering the various uses to which it is put, as it serves equally well for temples, D. A. R. convention halls, court houses, railway stations, and bungalows. A rubber stamp of the Temple of Pæstum is the *sine qua non* of the successful architect. It is interesting to note the persistence of the Greek idea through the ages in the three exclamations: Greek, "O Hellas"; Latin, "Helas"; modern American, "O Hell." Rarely does one architect look upon the work of another without the modern form of this art-felt expression springing to and from his lips. The style is a favorite one for bank buildings on account of its appearance of stability, combined with an indefinite number of openings for income or outgo, though in this respect it is less subtly symbolic than its Egyptian prototype, the Pyramid. Owing to the absence of circular openings, it suggests squareness and never suffers from the Roman complaint of fallen arches.

As He Is Known, Being Brief Sketches of Contemporary Members of the Architectural Profession.

R. CLIPSTON STURGIS

MR. STURGIS was born in Boston the day before Christmas in 1860. As he had relatives and connections in England, he apprenticed himself for three years to an architect in London, and later, returning to America, entered the office of his uncle, John H. Sturgis, where he succeeded to a considerable portion of his work. Since then he has practised successfully and well in Boston, has been for a number of years chairman of the School Commission, developing and controlling the city schools, and is now president of the American Institute of Architects. These data, however, do not explain a number of existing facts, for instance: why, being born in 1860, he should still be an exponent of perennial youth; why, being apprenticed to a very inferior British architect, he should have done admirable work; why, with a very broad catholicity of taste, he should be so thorough in refinement of detail; and why, in an environment of intensities, he should have kept an urbane attitude of mind associated with very definite opinions. All these apparent contradictions most have been the result of what is known as the personal equation, made up of a delicate sense of humor regulating the development of facts to a normal, not to an extravagant, condition, and playing upon the background of a very sincere mind. For sincerity of purpose, without the slightest ostentation, and equally devoid of casuistry, is the foundation of Mr. Sturgis' character. It appears in his work, whether devoted to his profession or to public or private interests. It was evident in the standardization of schoolhouse plans and equipment; it has been equally evident in his work in the American Institute of Architects and in his careful attention to details in his designs. He says he gained rapidity of draftsmanship in the London office. He certainly has, with his skilful and delicate touch in pencil and water color, outdone anything that ever came out of that office. Associated with his sincerity is a very just sense of relative proportions in facts and in fancies, for his facts and his fancies are felicitously interwoven in act and speech. At times there is a touch of Robin Goodfellow about him, which none the less accords well with a strenuous intention. It is not easy to give the impression in "mere words" of a personality with so many phases, all of them so co-operative with the sincere underlying idea; but the result is a man perpetually young performing the wise service of middle age. — *C. H. W.*

JOHN LAWRENCE MAURAN

JOHN LAWRENCE MAURAN was born in Providence, R. I., in 1866, and received his early professional training at the Massachusetts Institute of Technology, graduating with the class of 1889. After some time spent in travel and study abroad, he entered the Boston office of Shepley, Rutan & Coolidge. Later the work of this firm took him to Chicago, from which city he went to St. Louis as chief of the local office which his employers had established there. Shortly after he became a partner in the St. Louis office, but in 1900 withdrew from his connection with Shepley, Rutan & Coolidge and formed a partnership with E. J. Russell and E. G. Garden to practise under the firm title of Mauran, Russell & Garden. The success of the new firm was immediate and has been continuous. Mr. Garden's retirement in 1909 made way for the admission of Mr. W. D. Crowell to the partnership. The firm, both under its earlier and its present caption, has executed a large volume of work, various in character but always appropriate to its purpose. It is, however, the wide range of "Lawrie" Mauran's personal tastes and the adaptability of his talents which impresses and which tends sometimes even to depress the innocent bystander. His interests extend themselves far afield and touch many phases of the life and activities of his adopted city. He has been called upon to render much service in the public welfare and has contributed freely of his time, energy, and talents in many causes. By his example he has given the public a clearer idea of the proper practice of architecture and a renewed respect for the character of the architect. As is natural, he has been active in the councils of his local chapter of the Institute, and also in the affairs of the national body, as treasurer of which he is now serving his second term. He has brought to this office the same qualities of clear vision, high purpose, and tireless industry which have marked him in other relations. Whatever he has been called upon to do, he has done well; and yet it would be unfair to picture him as some forbidding monster of efficiency. Those who know him intimately value his loyalty, his easy companionship, and his genial outlook on life. He honors his profession, and that it has borne him just rewards is as fitting as it was inevitable. He has all the human qualities that appeal to the sense of fellowship, enjoys the interests of his fellow-workers, and possesses a fine feeling of sportsmanship. — *L. L.*

IRVING K. POND

IRVING KANE POND was born at Ann Arbor, Mich., on May 1, 1857. His ancestry on both sides traces back to English settlers in New England. It is, perhaps, justifiable to credit to this fact the vigorous independence of mind which is one of his marked characteristics in matters intellectual, political, social, and professional. His formal education was received in the Ann Arbor public schools and the University of Michigan, from which latter he was graduated in 1879 with the degree of Civil Engineer (hon. degree A.M. in 1911). Of far greater value, however, was the education he derived from his daily life in a home which afforded a steadily stimulating atmosphere of clear and forceful thinking.

Immediately after leaving the University Mr. Pond went to Chicago and entered the office of Solon S. Beman, just then come to Chicago to undertake the building of the town of Pullman. He became head draftsman for Mr. Beman and continued in this capacity until, in the spring of 1887, he struck out for himself in partnership with his brother, Allen B. Pond. His sojourn with Mr. Beman was broken by a year of travel in Europe.

Mr. Pond was one of the founders (now honorary member) of the Architectural Sketch Club (now the Architectural Club). He has always been generous of his time in efforts to raise and broaden the status of the draftsman and of the architectural profession. He is a Fellow of the American Institute of Architects, which he has served as director, vice-president, and president; and he is an active member of the Institute Chapter in Illinois, which he has served as president. The work of the firm of Pond & Pond covers the range that usually falls to an architect who does not purposely limit his field. For the Training School for the Baptist Home Missionary Society his firm received the first gold medal awarded by the Illinois Chapter (1909).

The architectural style—if one may use the word "style" of the work of an individual—that has come to be recognized as characteristic of the work of Mr. Pond has been of slow growth. Its roots can hardly be traced to the influence of any one country or period. The rather does it represent the sincere and thoughtful expression of a man who lives deeply and who feels that true art must be the sincere expression of the artist's living thought.

Mr. Pond is a member of the Chicago Literary Club; a charter member of the City Club of Chicago; a charter member of the Little Room and of the Cliff Dwellers; a member of the University Club and of the National Academy of Arts and Letters.—*A. B. P.*

HENRY HORNBOSTEL

HENRY HORNBOSTEL was born in Brooklyn, N. Y., on Aug. 15, 1867. He prepared for college at Deghuees School. He graduated from Columbia in the class of 1891, and continued his studies in Paris for several years. Upon his return to New York he entered partnership with Mr. Raymond and practised under the firm name of Raymond & Hornbostel. After Mr. Raymond's death Mr. Hornbostel worked as an associate with Howells & Stokes (1899) on the Phœbe Hearst competition for the buildings of California University. Later he became a member of the firm of Wood & Palmer, which later became Palmer & Hornbostel, and still later Palmer, Hornbostel & Jones.

Mr. Hornbostel sees, as perhaps no other man in this country does, the comparative values of the elements which make up a competition program. He knows how to emphasize those of importance until they fairly shriek their presence.

He never permits himself to be confused or hampered or limited by masses of detailed requirements; the salient features of the scheme leap into a coherent whole in his mind, and are readily translated by him into drawings which are after all found to have places for details as well, as for the main elements of the scheme.

The clause in many specifications, "Time is the essence of the contract," seems to have sunk deeply into his mind, and speed has become his dominant characteristic; he never leaves himself quite time enough to do a thing leisurely. Coupled with this vast physical energy is a mind of equal activity; he is interested in most everything and has opinions worth while about anything that comes up, although he may, perhaps, never have heard of the subject before; he has a most restless, active, enterprising, and inquiring mind and an imagination of surprising fertility.

He is a man who can in a brief time accomplish an enormous amount of work, and there are probably few in his profession who can draw so rapidly once he has set himself to the task. To fully appreciate his enthusiasm one should see him make a drawing; half his office waits upon him, while the other half admires; the board is tilted slightly towards him, a fine clean stretch of white tracing paper awaits his pencil and many more freshly sharpened are placed at the top of the board; loaves of bread await the time when it may be necessary to erase; his coat is off and his hands and arms move rapidly over the drawing. The picture is a great spirit of energy bent over a drawing table.—*A. E.*

EDITORIAL COMMENT AND NOTES FOR THE MONTH

THERE is at present a propaganda advocating that investors "Build Now." The reasons for this advice are as follows:

First. Materials are cheaper than they were and, therefore, buildings cost less to build.

Second. The contractors in order to keep their plants busy, and to avoid dismissing men, are ready to do work for less profit than they were.

Third. Because of less building, there is a constantly increasing number of unemployed, creating an unfortunate condition of public welfare, and increased building would normally put back these unemployed into the position of wage earners, thereby increasing the circulation of money and general prosperity.

Therefore, fire, fire, burn stick; stick, stick, beat dog, etc.

Now all these reasons given are true of the condition as far as the cash cost of buildings is concerned. The broad, general statement can be made and proved, that less cash is required for erecting a building now than twelve months ago. All minor detailed statements, such as to the cost of brick and cement, are unnecessary. Materials have decreased in value. Labor has not decreased in value, but stocks have. Recent investments are being made largely in bonds. Mortgage rates have increased. Additional deposits of collateral to cover loans have been demanded by the banks. All bills, including rents, are harder to collect promptly. Credits are extended, and the public generally is economizing, as the value of individual sales everywhere indicates. Therefore, despite the fact that it requires less cash to build, it is harder to get the cash, and the fire will not burn the stick. The investor does not see as ready a return for his investment as he did, and doubts whether proportionally he will get as good a return even on a less expenditure for value received. The cheapness of building is a result; it has not yet become a cause. What sane basis of advocacy of "Build Now" can be made, simply because it costs less cash to build now? There is only the basis of the natural growth of cities and towns. To cite an instance which is typical of the country at large: if the city of Boston has not overbuilt in the last ten years, — and it apparently has not, — it is certainly under building now. To an optimistic mind, the investor who builds upon the present market will have his building completed, ready for occupancy, at the very time that conditions become again more prosperous, and prices therefore increase. He will be the early bird and will catch the worm, provided there is one; but at all events he will have discounted the demand for location of the city's normal increase, and when all is said, this seems to be a wise act for the investor to consider, always providing he does not have to pay so dearly for his money that he wipes out the difference between the cost of building a year ago and the cost of building to-day.

Park Street Church, Boston, as Recently Restored

A FEW years ago a group of Boston architects started the movement of restoring the Colonial buildings in Boston, which had for many years been covered with paint, to their original appearance, which showed red brick exteriors and white painted trim. First among these restorations was the Old State House, then in order, — Christ Church, or, as it is more commonly known, the Old North Church, the Old South Meeting House, and the present instance, the Park Street Church, which has been a landmark of downtown Boston for a full century.

The results in each case have been most satisfactory, and in the last example, under the supervision of Putnam

& Cox, architects, in spite of several handicapping circumstances, the result is extremely pleasing. In addition to restoring to the walls their original red brick color which was effected by the sand blasting process of removing paint, two exterior fire-escape stairways and shop windows for the establishments which were to occupy the basement were additions necessitating careful handling to obviate doing violence to the design.

How well these features have been incorporated may be seen in the illustration herewith. The ironwork of the fire-escapes follows closely that of the period during which the church was built, and the intrusion of the shop windows in a church edifice is skilfully hidden by means of the small panes of glass set in bowed sashes.

The principal feature of the restoration, however, has been the vividness with which the return of the walls to their original brick red has thrown into prominence the fine detail of the building. When it was all painted uniform in color, one missed the cleverness with which the windows were placed in slightly recessed arches, and the way the engaged columns and entablatures were made to outline the two bays to right and left of the tower. Now these parts of the design are restored to their original values and the building seems to have a grace and dignity which are entirely new to beholders of this generation.

PLATE DESCRIPTION.

Webb Horton Memorial Presbyterian Church, Middletown, N. Y., Plates 1, 2, and 3. This church is located near the center of Middletown, N. Y., on a site large enough to permit a successful grouping of the buildings, though its proportions compelled careful study to secure the plan permitting the best and most effective use of the space. The grouping and the architectural character of the buildings are in the spirit of a modernized adaptation of the Italian Romanesque.

The buildings are placed on three sides of a court which faces on the street and occupy a space approximately 155 by 160 feet. At the rear of this court, set well back, is the main building containing the church auditorium, about 70 by 77 feet, and entered at the grade of the court. Beneath this in a story opening at a lower grade is a completely equipped gymnasium with a tile lined swimming pool about 18 by 40 feet and a bowling alley.

Extending forward to the street from the main building on either side of the court are the parsonage and the Sunday-school buildings, the latter containing the rooms for the social as well as the religious work of the church. The heating plant is in the cellar of this wing.

The basement walls are concrete with rubble facing. The upper walls are brick faced with a gray buff brick laid in common bond with raked joints. All steps are bluestone and sills limestone. The inserts in the brickwork are of terra cotta. The roofs are red Spanish tile with copper gutters and leaders. All the tower floors and the auditorium floor are of fireproof construction.

The cost of all the buildings was about $150,000.

Public Bath in the Grove, Kansas City, Mo., Plate 4, — Pulaski Park Field House, Chicago, Ill., Plate 5, — Public Bath and Gymnasium for the City of New York, N. Y., Plates 6 and 7. See article on page 13.

House of Charles A. Cass, Esq., Ardsley Park, N. Y., Plates 8, 9, and 10. The house is situated rather close to the road on a plot which contains four acres. It is derived from the simple type of English country house, as found in the Cotswold district. It is built of a rough textured brick, ranging in color from light red to the darkest brown — in fact, some are almost black. The joints in the brickwork, as may be seen in the illustrations, are rather wide and very deeply raked, so that the edge of each brick is exposed clean. Gables, eaves, and projections are all formed in the brick courses, as little wood being used in exterior construction as was consistent. All timbers which are exposed on the exterior, such as rafter heels, porch posts, lintels, etc., are hand-hewn chestnut or oak and are structural in every sense.

The roof is of stones of varying thicknesses, being one inch or more at the starting course and gradually decreasing towards the ridge. They have also a slight variation in color, consisting of gray, green, and the lighter of the purple tones, this latter being used to carry a little of the general wall tone into the roof.

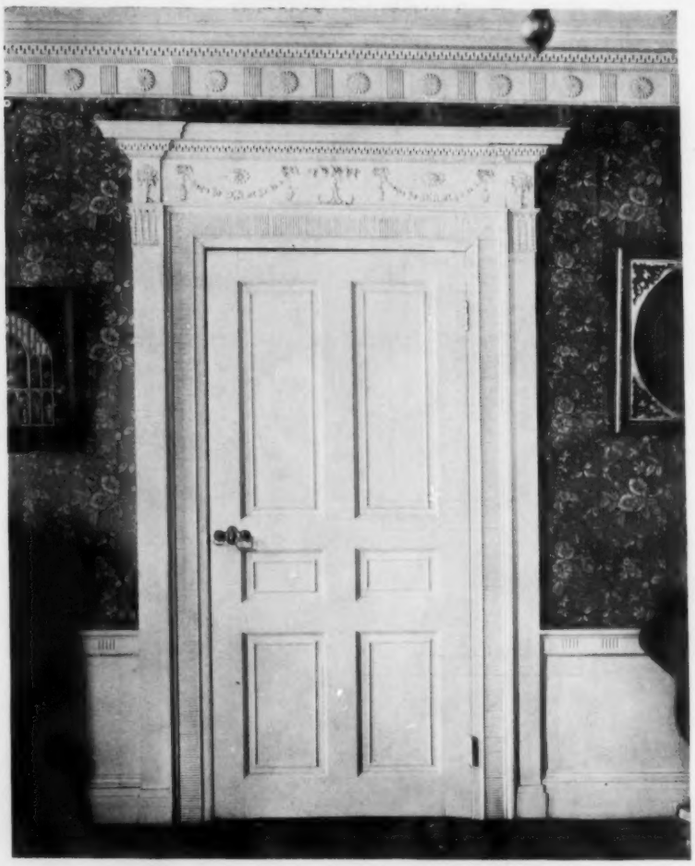
House of George S. Mandell, Esq., Hamilton, Mass., Plates 11, 12, and 13. This is a comparatively large country house, situated on a rolling country side near the north shore of Boston. It is typical, especially on the entrance front, in its informal handling of brickwork, of the character which pervades much of the country house work in the vicinity of Boston. It is designed in a free adaptation of Colonial forms as they are found in the early New England farmhouses, some of which were built of brick. The detail of dormers, cornices, belt courses, etc., follows the very simple lines of the early prototypes. On the garden side the house assumes a more formal character, suggesting English Georgian work, and shows an unusual grouping of a three-story central mass with a gambrel roof which combines agreeably through the agency of the large chimneys which come through the roof at the points of intersection.

House of R. Lancaster Williams, Esq., Eccleston, Green Spring Valley, Md., Plates 14 and 15. The house is situated on the top of one of the hills which form the southern border of Green Spring Valley. The nature of the site, as well as the preference of the owner, suggested an oblong plan, the long axis parallel with the ridge of the hill, with the principal rooms overlooking the valley, although this is the northern exposure.

The requirements, in general, called for a rather large house of moderate cost, suitable for occupancy during the entire year. The arrangement of the first and second stories is shown by the plans. There is a basement story under the entire house, except the porches and terraces. In the basement are placed the laundry, the boiler room, cold storage, the pressure water storage tank, etc.

The house walls are of terra cotta hollow tile faced with brick. The floors, roof, and partition are frame. A local brick was used, varying in color from a purple red to a salmon red, and laid in Flemish bond with slightly raked out ⅝-inch thick gray mortar joints, giving a wall moderately rough in texture and a soft neutral red in color. The cornices, columns, frames, and sash are painted a cream white; the shutters, lattice, and flower boxes a bluish green, and the ironwork a very dark blue. The roof is covered with an unfading green slate.

THE BRICKBVILDER COLLECTION
EARLY AMERICAN ARCHITECTURAL DETAILS



DOORWAY IN THE NICHOLS HOUSE, SALEM, MASS.
SAMUEL McINTIRE, ARCHITECT BUILT IN 1800

MEASURED AND DRAWN BY
GORDON ROBB & M. A. DYER

Plate
Two

(over)

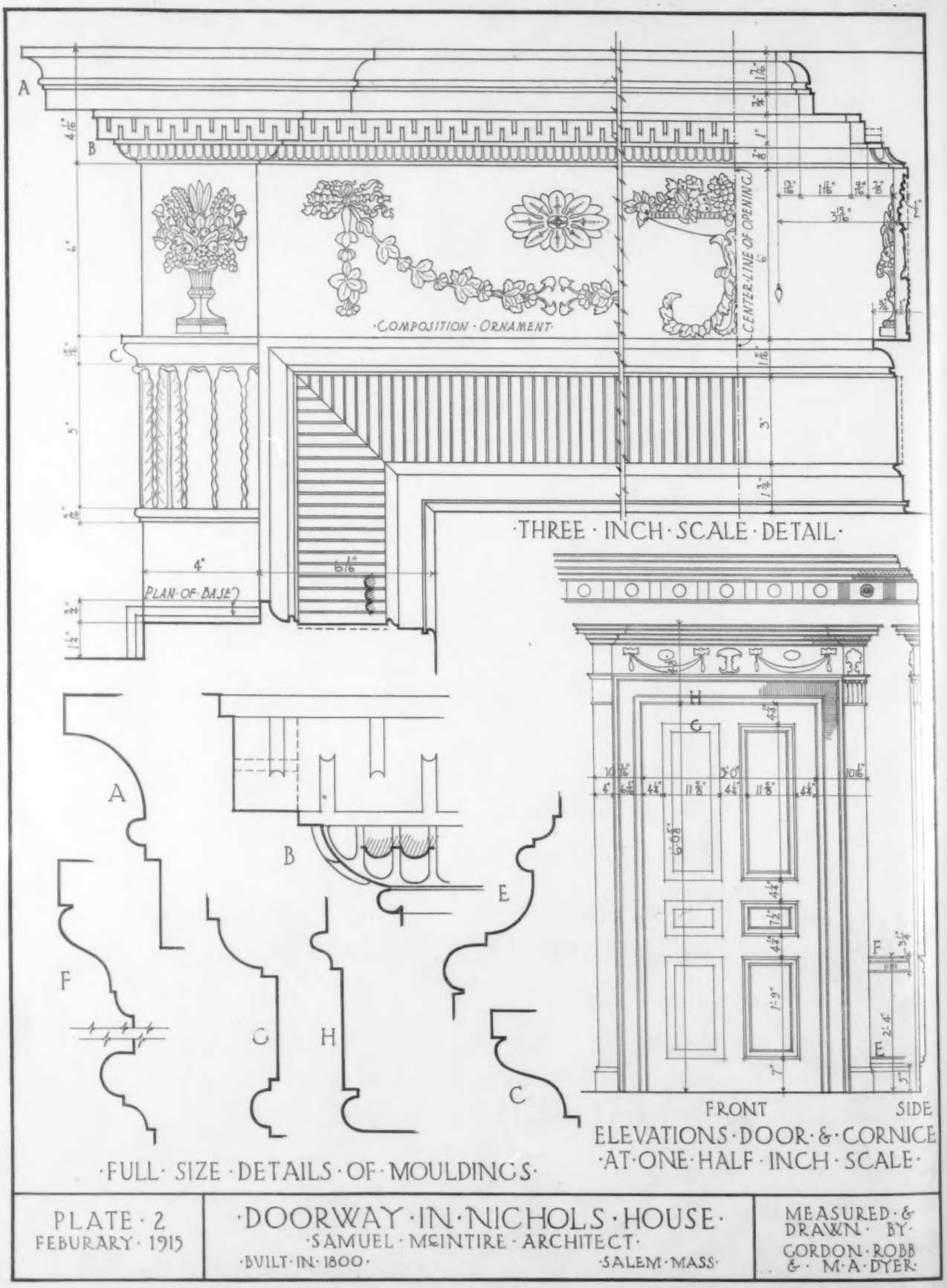


PLATE · 2
FEBURARY · 1915

·DOORWAY · IN · NICHOLS · HOUSE·

·SAMUEL · McINTIRE · ARCHITECT·

·BUILT · IN · 1800 · ·SALEM · MASS·

MEASURED · & DRAWN · BY · GORDON · ROBB & · M · A · DYER·

PALACE OF SUAREZ SOLÍS DE CAÑADA, SALAMANCA, SPAIN

ERECTED IN THE XVITH CENTURY